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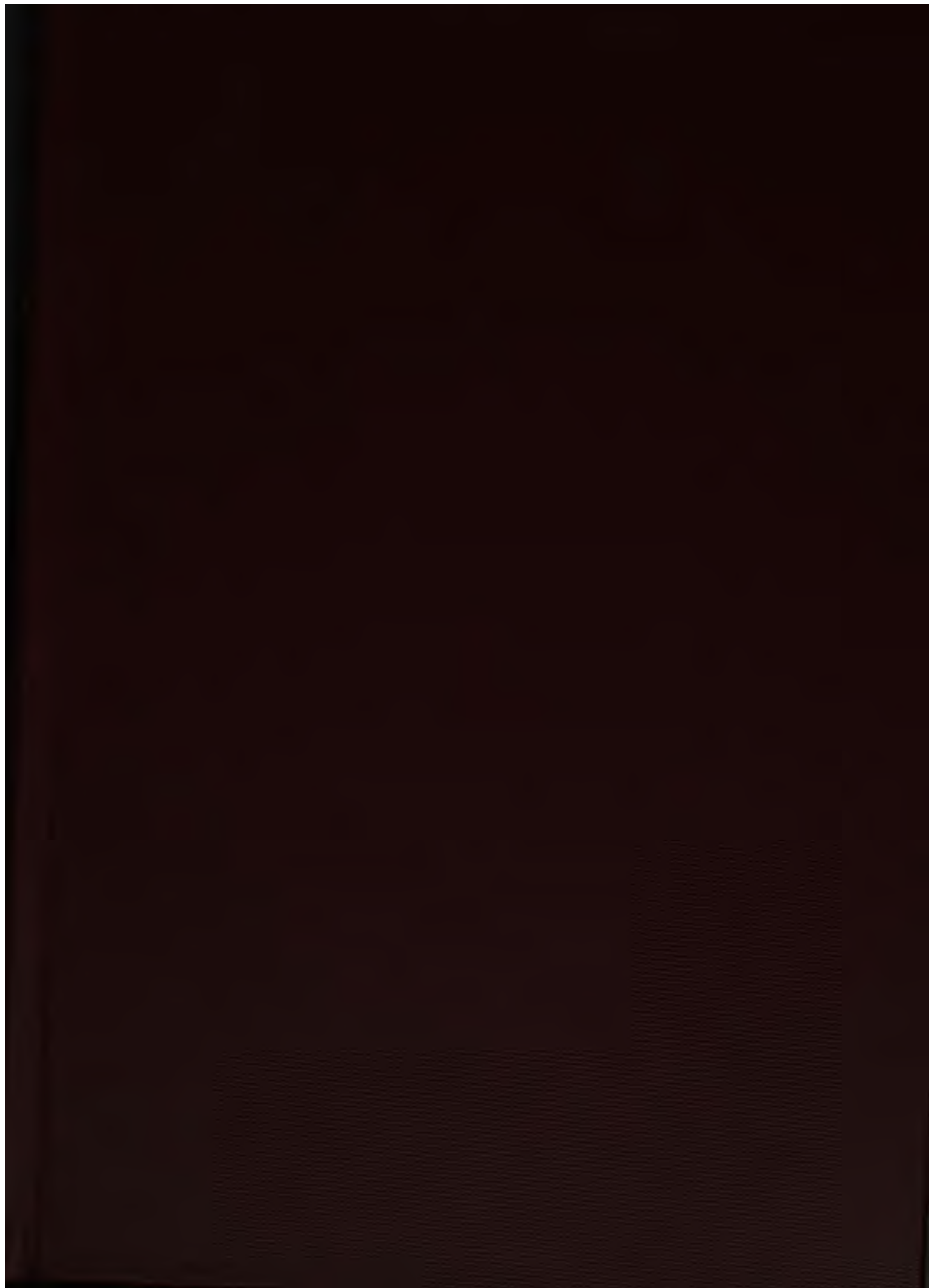
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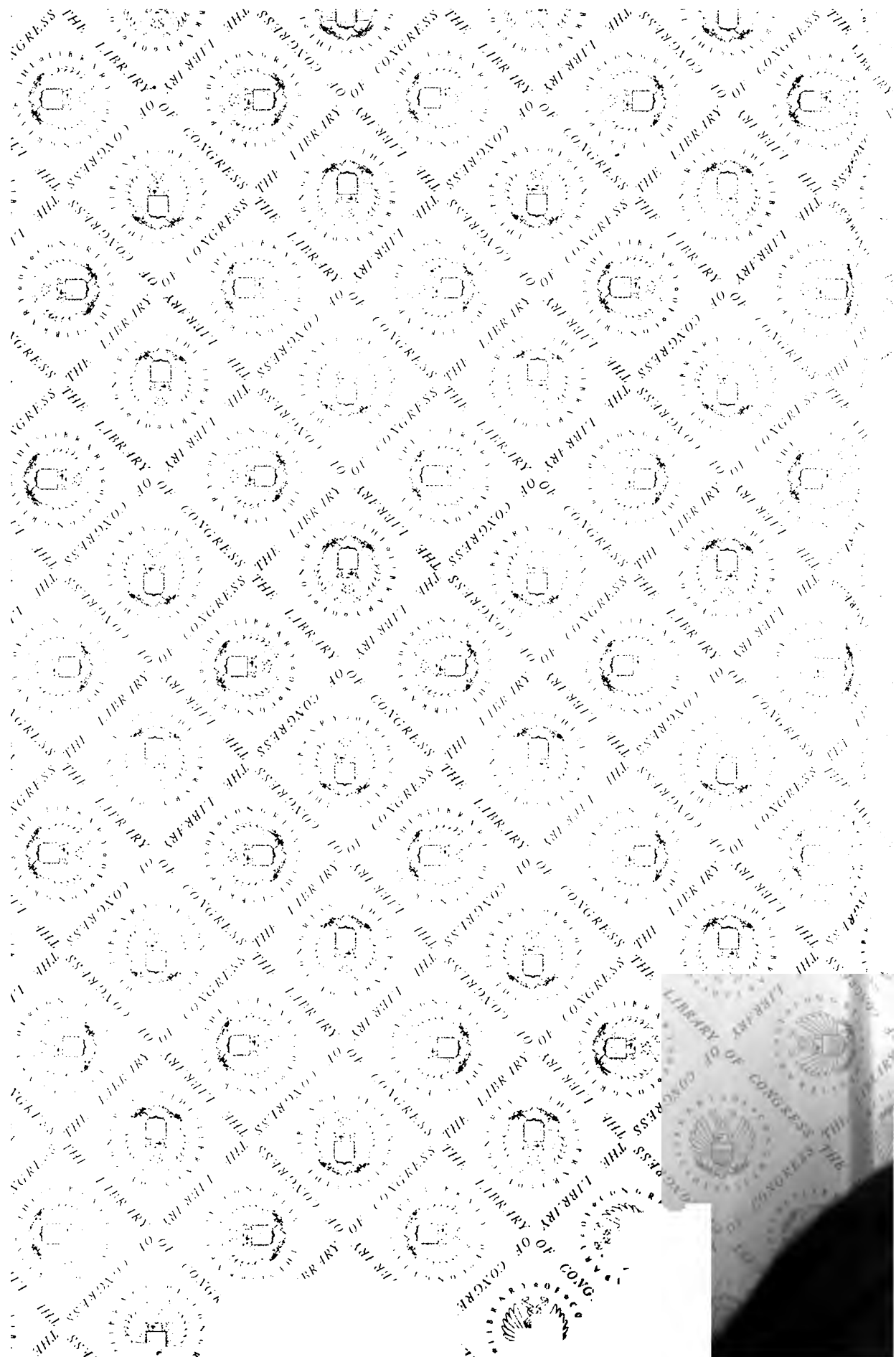
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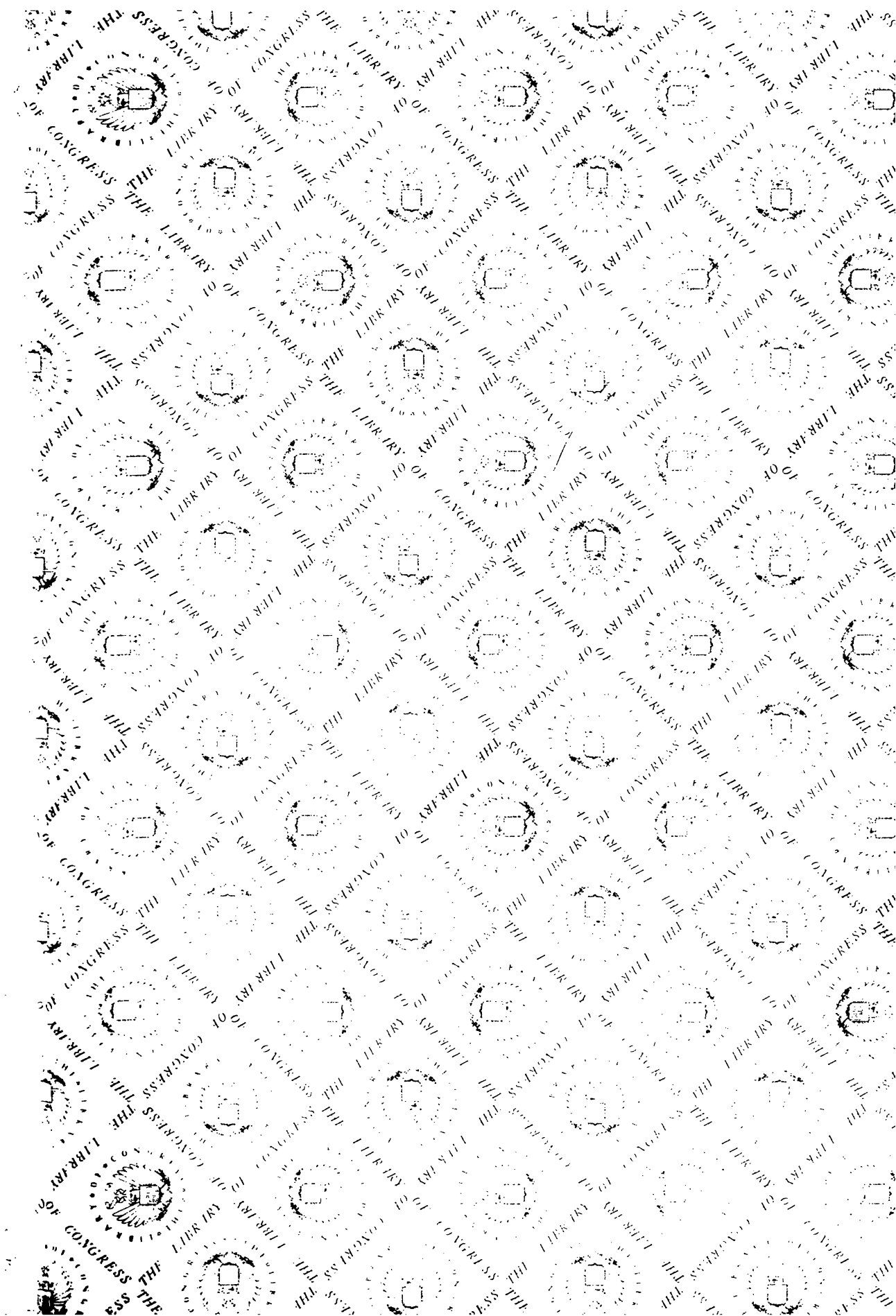
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THE
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COTTAGE GARDENER,
 AND
COUNTRY GENTLEMAN.

A JOURNAL OF HORTICULTURE, RURAL AND DOMESTIC ECONOMY, BOTANY AND
 NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S. AND ROBERT HOGG, LL.D., F.L.S.

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" picea glauca	140	" Rubber-hut	140	Comb-hive	186

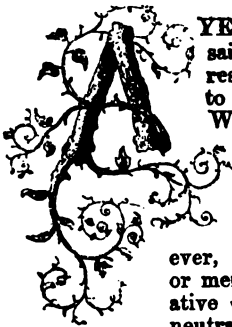
WEEKLY CALENDAR.

Day of M th	Day of Week.	APRIL 2—8, 1861.	WEATHER NEAR LONDON IN 1860.					Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.							
				deg. deg.				m. h.	m. h.	m. h.		m. s.	
2	Tu	EASTER TUESDAY.	29.203—29.059	46—35	S.W.	·22	35 af 5	32 af 6	21 2	2	23	3 35	92
3	W	Gentianaella	29.605—29.456	55—26	S.W.	·01	33 5	34 6	54 2	23	3	3 17	93
4	Th	Star of Bethlehem.	29.729—29.676	56—37	E.	—	30 5	36 6	17 3	24	3	3 0	94
5	F	Siberian Squill.	29.816—29.694	56—39	N.E.	·01	28 5	38 6	37 3	25	2	42	95
6	S	Soldanella.	29.828—29.738	60—30	N.E.	—	26 5	39 6	53 3	26	2	25	96
7	SUN	1st, or LOW SUNDAY. PRINCE	29.864—29.824	63—36	S.W.	—	24 5	41 6	7 4	27	2	7	97
8	M	Alyssum saxatile. [LEOP. B. 1853.]	29.807—29.436	57—35	S.W.	·01	22 5	42 6	20 4	28	1	50	98

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 56° and 36° respectively. The greatest heat, 79°, occurred on the 7th, in 1859; and the lowest cold, 16°, on the 2nd in 1838. During the period 157 days were fine, and on 101 rain fell.

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OUR ADDITIONAL NAME.



YES to the right—Noes to the left," said we, as we looked over the correspondence we had invited relative to our proposed alteration of title. When we came to the end of our division there could be no room for doubt, and we closed the counting of votes with "The Ayes have it."

Let it not be concluded, however, that those letters were few, or merely records of the writers' affirmative or negative opinion. Some were neutral and imparted the rough truth—"the title is of but little importance to us your readers;" some availed themselves of the opportunity to say what they required and what they took no interest in; and those who wished us, as one expresses it, "to be as ye be," argued strongly and earnestly.

One said, "People wo'n't know you in a fine silk and satin dress. Stick to the corduroy and good Yorkshire broadcloth."

A second wrote, "I once tried to assist a man, as I thought, in extending his business; but I soon found all the money went for a new front, and in a few months a smash came."

A third declared, "The time-hallowed name of THE COTTAGE GARDENER is, I may say, 'familiar as household words' in many a nook and corner of old England. Why, then, change it? Why not preserve the unity of our future volumes?"

A fifth urged that, "The present title is not quite so great a misnomer as at first sight appears. In addition to cottages 'where poor men lie,' are there not 'cottages of gentility?' Besides, make what change you will, your periodical will be called 'THE COTTAGE GARDENER' in spite of you, by buyers and vendors, till the end of the chapter—and may that be long distant."

A sixth argued—but we must publish our old supporter's letter entire:—

"The pure and simple title of 'COTTAGE GARDENER,' or, as many called you, 'the Cottage,' was of itself very attractive. When you added the title of 'Country Gentleman' I did not think it an improvement of your nomenclature. But there, perhaps, was a sufficient reason, because you then entered upon pursuits and amusements which appertain to the 'Country Gentleman'; and I think that the majority of your supporters will agree that your present appropriate title will embrace all that can be collected in Horticulture, Floriculture, Agriculture, and, I may say, Omniculture, to say nothing of the 'Chronicles of the Poultry Kings.'

"I for one hope that you will not alter your pleasant name, although, by-the-by, you have just arrived at your twenty-fifth period—a time of life when ladies do b to get uncommonly

No. 1.—Vol. I., New

fidgetty about changing their names. I trust, however, that you are too well and happily domiciled to be influenced like some of them; and I hope you will not take it amiss if I heartily wish that you may retain unaltered your present attractive and homely name until you have doubled or trebled your present age, growing stouter 'typically' as you advance in years. I have little doubt that since your first appearance many a cottage gardener has, by his industry, perseverance, and your aid, become a country gentleman; but of this I am certain—that you have taught many a country gentleman the pleasure and advantage of being a cottage gardener."—W. W.

Now, strange as it may seem, these remonstrant and kindly expressed letters reconcile us to the addition to our title, for they do not foreshadow a single evil that will follow upon the change. We can assure our friends that we do not intend to dress in future "in silk and satin," and we shall stick as heretofore "to the corduroy and good Yorkshire broadcloth." Moreover, we are not "spending money" upon "a new front," nor do we think the addition to our old front will induce "a smash;" neither shall we be grieved by being called "THE COTTAGE GARDENER in spite of us," nor do we fear ceasing being "familiar as household words:" indeed every letter shows that we are associated with the "blithe blink" of their writers' "ain firesides," and that's a guarantee to our remaining there "to the end of the chapter." As to the "unity of future volumes" with their predecessors, we have made arrangements for that; and if we are "fidgetty," like ladies of "twenty-five" to "change our name," it is only because we have a good match in prospect and the preceding approval of our friends.

The chief difficulty has been to select from the matches proposed. One old friend, writing from Cheltenham—that town of connubialities—placed before us no less than fifteen which he considered eligible, and very mature deliberation only induced us to accept the name under which we this day appear.

"But what is the real inducement to the change?" asks a lady; and this letter embraces our reply—it is from one of long experience in the literary world.

"I am greatly pleased to see that you are following the right policy—namely, increasing the size of your Journal as it prospers, and thus giving the public a share in its success: this will induce still further good feeling among its subscribers. I have long felt how entirely it has outstripped its original cognomen; and it is not conducive to your own interest to call it 'THE COTTAGE GARDENER,' when, in truth, it circulates more largely than any other journal among professional gardeners and the gentry who delight in gardening. And let me appeal to your self-esteem by observing that when quoted from, there is not much dignity in your appended name."—J. S.

Now, we have not a single additional reason to add to those stated by our friend; and having thus made our public confession, we will at once conclude with this monition by a high authority, "Be not given to change, but never hesitate from changing if the purpose be honest, and the object truth."

No. 653.—Vol. XXVI., OLD SERIES.

GROWING SPECIMEN PELARGONIUMS.



THE above woodcut is a representation of a specimen Pelargonium that was exhibited and presented to Her Majesty the Queen.

This picture will give our readers an idea how such a plant can be grown; and I think they will all agree that it was as good and as perfect a specimen as could be wished for. The method by which such a plant can be produced may not be so well known; but by tolerable care and earnest perseverance through all the stages and points of culture, any one possessing a good greenhouse, and a cold pit or frame, may grow one or more equally fine.

In order that any amateur or gardener having the means and the laudable ambition to try to produce such a specimen may succeed, I will state the results of my experience; and the first advice I would give them is that they lay this down as a law, like that of the Medes and Persians, to be unaltered or undeviated from—*Never let the leaves of plants intended for specimens touch the leaves of neighbouring plants.*

As they grow larger they must have more space, and that space will not be wasted; for one shapely, well-grown, and freely-bloomed plant will give more pleasure to the spectator with good taste than half a dozen drawn plants, though, as far as space is concerned, they may produce equally as many blossoms.

Another primary rule of almost equal importance is so to place the plants that every leaf shall have an equal share of light. It is well known that light is necessary to keep the leaves healthy and of an equally deep green colour. To manage this with the greatest ease, a span-roofed house running east and west is the best form. In such a house the greatest number of leaves receive their share of sunlight. In a lean-to house, the plants, in order that the leaves may all enjoy the same advan-

tage, must necessarily be turned round frequently, which, under ordinary circumstances, is a considerable trouble. This trouble might be in great measure avoided by placing each plant in a feeder with holes in it to let out the water; and the feeder and pot set upon a round, flat, piece of wood set on a pivot, like the top of a music-stool. If this piece of wood had notches made on its edge, a long and strong stick with a flat, sharp end could be inserted in one of the notches, and by pushing sideways the plant would of course move round. By this simple and cheap contrivance a man would be able in a few minutes to turn round the plants in a good-sized house, thus saving a large amount of time; and he would also avoid any danger of breaking the leaves or branches with his arms—a danger that often occurs when the plants have to be turned round in the ordinary way.

Equally important for the health of plants is that each should have its due supply of fresh air on all favourable occasions. Fresh air is as necessary for plants as for animals. Where too great a number of plants are crowded into a house, they will be injured in health just like human beings. The gas they emit should be expelled from the house, and fresh pure air admitted for the plants to inspire; due regard being paid that the admitted air is not too cold, being warmed as it enters by passing over a heated surface, such as a flue or hot-water pipes.

Soil.—Every cultivator who has had any experience and exercises his thinking powers, soon finds out that different plants require different soils. Pelargoniums require a strong soil—that is, good sound loam, such as will grow Melons. The top spit of a pasture will answer well. Let it be carted home and laid up in a long ridge so as to expose as large a surface to the air as possible. Keep it clear of weeds, and let it be turned over two or

three times. To two parts of this loam add one part of two-year-old cowdung, well turned over frequently. Old hotbed dung treated similarly will do nearly but not quite as well. Then add about one part of river sand and bits of charcoal mixed. Let all these ingredients be kept in separate heaps till wanted for potting, then mix them in the above proportions and use them moderately dry. This compost should be used to grow and bloom the plants in. For the winter season use a small quantity of leaf mould instead of the dung. Fresh soil is always to be preferred, for old soil is apt to become cloddy and sour.

Procuring the Plants.—The best time to procure young plants is in April. Plants struck early the previous season are the best to commence with to lay a foundation for specimens. Choose such as are dwarf—that is, with a centre or main stem about 2 inches high, and branching from it three shoots as near each other as possible. If, however, the plant is stout and with leaves nearly down to the pot, then one or two shoots would do; but, then, these must be stopped in close to obtain three shoots of equal strength to form the frame of the future specimen.

Supposing the plants have to be procured from a respectable nurseryman at a distance—some one that grows specimens himself, you might safely leave the choice of the plants to him, only acquaint him in your order-letter with the purpose for which you require the plants. In 60-sized pots is the best size to commence with.

When the plants arrive place them in your greenhouse for a week or ten days to recover from the journey. In the meantime prepare your soil and mix it thoroughly, but do not sift it. Any rough pieces you may meet with lay on one side, they will be useful to put upon the drainage. Place this compost in a warm place to become aired and moderately dry previously to using. Look out also the proper-sized pots for this first shift. Large 48's, if the plants are strong and healthy, will be the suitable size. Have ready also a quantity of broken pots for drainage. If oyster-shells can be had they answer well to place over the hole at the bottom of the pot.

Potting.—Pelargoniums grown for specimens require potting twice in the year; the first potting being in the spring, and the second in the autumn. It is with the spring potting that we must first have to do.

All being ready, bring the young plants to the potting-bench, fix upon one to begin with, and put the drainage in a suitable-sized pot for it. Place first either a large crock or an oyster-shell over the hole; then lay a few largish crocks upon that, and then some smaller ones above them—the whole to occupy about three-fourths of an inch. Place a thin layer of moss upon the drainage, and upon that either a sprinkling of soot or charcoal dust. After that place a thin layer of the rougher parts of the compost, and finally a layer of soil. Then turn the plant out of the pot, pick out from it the old drainage, and loosen part of the roots, spreading them out over the new soil as much as possible. Then see that the collar of the roots is just below the rim of the pot, and fill in around the ball with the fresh soil, pressing it down gently as it is put in. When the pot is full give it a smart stroke or two upon the bench to settle the soil, level it neatly, leaving it about half an inch below the rim of the pot.

That finishes the potting of one; and when all are finished similarly, then give a good watering with tepid water and replace the plants in the greenhouse, bearing in mind my first warning—to give them plenty of space; also place them as near to the glass as may be convenient to give them proper attention in watering.

For a month or five weeks, whilst new roots are running into the fresh soil they will not need a large supply of water; but when the roots reach the sides of the pots, and the leaves and shoots are advancing in growth, then water will be required in abundance. They should never be allowed to flag. After a hot sunny

day let the plants, in addition to water at the roots, have a gentle dewing with the syringe: exercise discretion, however, in this point. No drops of water should be on the leaves the morning following: therefore the syringing should be used to the extent only that the water may be evaporated by the time the sun rises. T. APPELBY.

(To be continued.)

MAUVE AND MAGENTA.

The beauty of these colours has often been dwelt upon, and now we have a most interesting treatise on their preparation from the pen of Mr. Robert Hunt, so well-known for his researches concerning the nature and properties of light.*

"A piece of wood and a lump of coal," observes Mr. Hunt, "have no particular resemblance to each other, but they belong to the same family—they are very near relations. The coal we burn, and which is dug from a thousand feet below the present surface of the earth, with most laborious toil and under circumstances of peculiar hazard to the miner, was once a forest growing in luxuriant beauty, in the splendour of a tropical sun. Myriads of ages have elapsed, mountains have been worn down, and their debris strewn over the buried forests. Hundreds of yards in thickness of sandstone and shale have to be pierced ere we reach our buried treasure, more valuable far than the "hoarded gold" of the enchanter Merlin. In the depths and in the darkness of these rock formations chemical changes have gone on, resulting in the production of that coal which gives to our country her commercial supremacy, and to our ladies—Mauve and Magenta."

Whilst converting that coal into gas for the purposes of illumination we all know that a most pungently-smelling tar is produced; but, offensive as it is, "the chemist's magic art" has extracted from it several essences remarkable for their fragrance; and from the same black tar—to touch which was to be defiled—by a process of transmutation, the chemist has evoked a colour which has carried joy to the hearts of the Cardinals of Rome, and administered pleasure to the fashion-rulers of our own and other lands."

From the tar a blue colouring matter was first obtained, to which the name of *Aniline* has been given, because *Anil* is the name of a plant yielding Indigo. *Aniline* combines with sulphuric acid (oil of vitriol), taking the form of crystals which become red by exposure to the air; "and here is developed the secret of its producing the exquisite reds and purples of which we write."

"Mr. Perkins was the discoverer of the original Mauve. He was a student of Dr. Hoffmann's, and employed by that chemist to assist him in his investigations of the products from coal. The preparation of Aniline was described by Dr. Hoffmann, and he first showed that its presence could be detected by the violet colour it gave when treated with chlorine. This was the key to everything that has since been done, and it is not a little curious to see how the changes have been rung by the chemists on oxidising agents. A few examples will suffice:—

Salt of Aniline, with Bichromate of Potash...	Mauve and Perkins' Purple.
Ditto Bichloride of Mercury...	Magenta, and other Reds.
Ditto Bitartrate of Tin	Fuchsine, &c.
Ditto Nitric Acid	Azaleine, Solferina, &c.
Ditto Arsenic Acid	Reds and Purples.
Ditto Peroxide of Lead	Roseine.
Ditto Manganese Salts	Pink, Red, and Purple, Solferina, &c.

This list might be considerably extended if there were any reason for so doing. Our purpose is answered if we have sufficiently explained the sources from which are now procured this class of charming colours, before which the boasted Tyrian or imperial purple must pale. The colour obtained from the shell-fish does not appear to have been a permanent colour; though costly, it was evanescent. The Mauve and Magenta are permanent colours. Light does not bleach them; the weaker acids do not stain them; the colour is dependant on the oxidation of the base of it, whereas, in nearly all other colours, the action of oxygen is to destroy the colour."

* This essay, entitled "Mauve and Magenta" is published in the *St. James's Magazine*, the first Number of which has appeared this month. When we knew that the editorship of this periodical was entrusted to Mrs. Hall we expected that it would be characterised by a just appreciation of the beautiful, and a mingling of information with amusement. We are not disappointed, for it is one of the best of the monthlies.

REDLEAF AND ITS GARDENING.—No. 1.

As it is universally admitted that a bright day enhances the pleasure of all out-door gatherings, so does a fine neighbourhood improve the effect of well-directed skill towards embellishing a particular spot. As an instance of this, whoever has looked down from the Crystal Palace on the beautiful terrace below, without at the same time casting their eyes over the picturesque landscape by which that garden is surrounded? These natural advantages are so obvious, that we often look with pity on a good residence and grounds improperly placed for benefiting by the natural beauties by which it is surrounded. This defect, however, in no way affects the position chosen for the mansion and grounds of the place now under notice; for nothing possibly could be more judicious, even in a neighbourhood abounding in good positions.

The mansion and grounds of Redleaf, the seat of W. Wells, Esq., is on one of those eminences which form so pleasing a feature in the landscape of the south-western part of Kent. The ground is sufficiently undulating to be pleasing to the eye, without being too abrupt and precipitous to impede cultivation. Oak timber of the best description is sufficiently grown to give a clothed character to the district, without at the same time concealing the cultivated portion. The soil being a sort of yellow sandy loam, evidently impregnated more or less with iron matter, and resting on a sort of sandstone, which in some places crops out to the surface. But there are some stiff clays; and on the grounds at Redleaf, a natural slope facing the west consists of tolerable peat, or what in every sense answers as a substitute for it, so far as the welfare of the Rhododendrons and other things is concerned.

The mansion is a modern brick building, to which considerable additions have been recently made by its spirited owner. The approach is from the north-east, the principal fronts being on the east, south, and west sides.

The situation being elevated, the ground inclines rapidly to the west, and more gently and with some variation to the south, the east side being more level. The gardens and dressed grounds extend mostly to the south, south-east, and south-west of the mansion. The west side more quickly blends in with the park, which runs as a valley for some distance between the beautifully timbered ridges which flank it on either side. This valley extends for many miles, the view from this point being very interesting; the ridge forming the right flank presents many portions of its rocky surface to the eye, and the judicious mixture of deciduous and evergreen trees gives it a pleasing effect. The natural sloping ground uniting this ridge with that on which the mansion stands contains the natural peat alluded to, and is planted with Rhododendrons of good kinds, which seem so well at home that they ripen seed and sow themselves, plants of various sizes appearing amongst the Fern and other herbage, for this is not dressed ground. Some excellent specimens of *Cryptomeria japonica* and *Picea cephalonica* were growing amongst these Rhododendrons in luxuriant health, and some others of the *Pinus* tribe had been introduced with good effect, and with every prospect of their doing well.

In the foregoing outline of the natural features it will be seen that the most of the dressed ground is to the south of the mansion, and to the south-east and south-west of it; and although the whole, in farming phrase, may be said to lie within a compact ring fence, yet each department is separated from its neighbour by a sort of natural barrier, by which, on looking over the place, the visitor comes suddenly on some feature he had no reason to expect. These natural boundaries, or what, by a judicious assistance of art, seem to be natural divisions, often consisted of a projecting mass of natural rockwork, to which an excellent mode of appending other stones and tasteful planting gave an idea that Nature had done the whole. In another

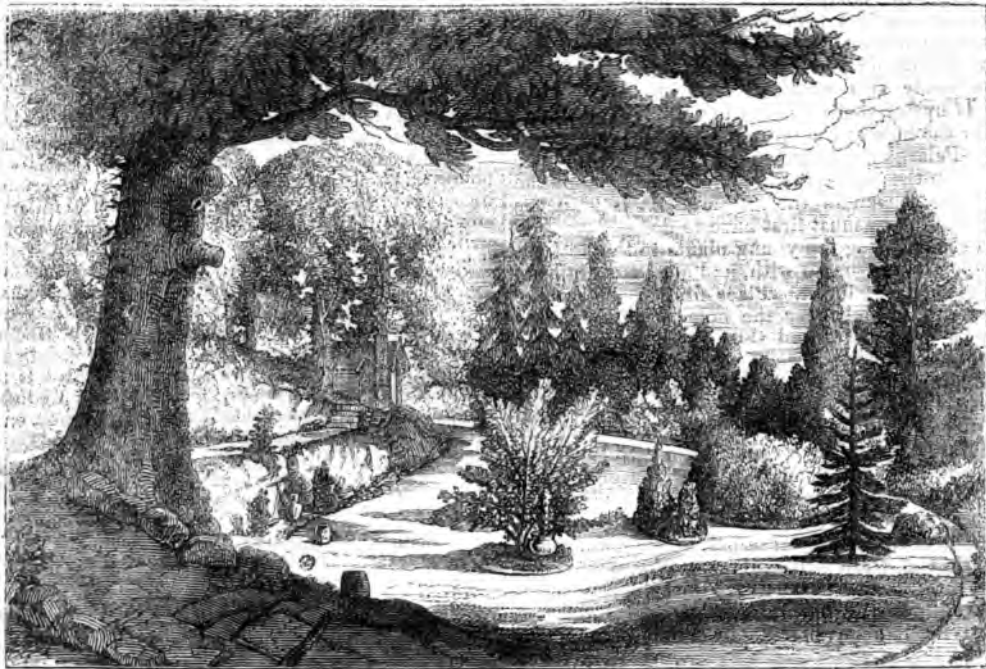


Fig. 1.—REDLEAF—The English Garden.

place an irregular mass of Hollies forms an impenetrable screen between two objects, both in themselves good, yet advisable to conceal from each other. At the same time care has been taken not to allow these barriers to interfere with the good view of distant scenery that every now and then claims attention; for as it is observed, that with the exception of a Dutch flower garden and conservatory attached, the whole of the other portions of the grounds present that easy natural style which ignores straight lines, perfect levels, and geometric figures.

The engraving shows different views of the grounds, which

we shall place before our readers, in many instances, fall short of conveying a just conception of this remarkable place, and the taste and skill by which it has arrived at its present condition; but they may, nevertheless, be acceptable as conveying some idea of the beauties of the grounds.

Fig. 1 is a view of what for distinction we may call the "English Garden," which consists of a large space of nearly a circular shape. The view being from the west presents a mass of natural rock on the left, or north side, with a fine *Magnolia* conspicuous in the centre, and an equally fine *Cryptomeria*

japonica, and other plants equally good. The whole of this space is well-kept turf with a walk surrounding it. On the outer side of this walk, on the south side, is a border of Roses backed by choice shrubs; and a series of oval-shaped beds (not shown in the figure) form a sort of chain on the grass on the inner side. The walk ascends to the top of the rocky eminence on the north side, and enters a summer-house (as shown in the engraving), the exterior of which presents some of the features of a Swiss cottage. Internally it is fitted up by the floors and walls being inlaid with woods of different kinds arranged in geometric patterns, but no varnish or French polish to destroy the character for natural simplicity which it is intended to convey, the roof being shingles. An inner compartment contains some fine specimens of porcelain and other rarities.

The position of the summer-house—on a ledge of rock over-

looking a garden containing some excellent specimens of *Araucarias*, *Rhododendrons*, with some *Camellias* and *Azaleas* on the approach to it—is beautiful in the extreme, as it is not crowded. The rock itself is in some places clothed with dwarf-growing *Rhododendrons*, with a little *Ivy* and other things, but in no instance crowded nor yet showing the equally objectionable feature of having been cut to keep it in bounds. Sufficient of the rock is shown to produce a pleasing effect, which is in some degree increased by a noble Oak tree shown in the foreground, and I have no doubt but in summer the beds will be rich with the choicest bedding plants; but at all times the scenery is attractive, and, secluded as it appears to be from the outward world, it is easy to picture the conjectures a playful imagination may bring up to second objects in themselves approaching so near the ideal of perfection.



Fig. 2.—REDLEAF—View from the drawing-room window.

The above is a west view from the mansion, which has, in some measure, been explained before. The valley, which near the mansion does not exceed a quarter of a mile in width, widens out in the distance, the extreme view being, I believe, upwards of twenty miles.

The rocky ridge on the north side near the house presents among other very noble trees some fine Oaks mingled with Scotch Firs, and now and then a Cedar of Lebanon jutting out in a manner that promises at some future day to rival the Oak in its proportions.

The grounds immediately in front of the mansion at this side present no particular object, but shelving down to the park seem to unite with it; the fence being in most places concealed

by the inequalities of the ground, a piece of water in one place forming the boundary.

The park, wisely, is not encumbered by trees in this direction, the ridges at right and left constituting sufficient shelter; but on the northern slope against a mass of rock, a rifle-butt stood out conspicuously, showing that even in this "happy valley" the laudable desire of uniting, in case of need, to defend our common country against all invaders is not forgotten, and, assuredly, no object can be more praiseworthy.

The natural hill or slope to the north of the house contains the peat earth before alluded to; and being planted with choice things, with occasional common ones as nurses, will at some future time be an important feature.—J. ROBSON.

(To be continued.)

EXHIBITION OF UNFORCED HYACINTHS.

MESSES. ARTHUR HENDERSON AND CO., PINE APPLE PLACE NURSERY, EDGEWARE ROAD.

YESTERDAY, and during the last days of March, the good people of London had access to the first public exhibition of unforced Hyacinths on record. Miss Burdett Coutts and Madame Van der Hoop were hardly in their carriages from the Messrs. Cutbush's brilliant entertainment up at Highgate when I heard of their resolve to meet some of their best admirers among the fashionables of the West End, at Pine Apple Place on the following week on free-and-easy terms, without forcing and without restraint. It is quite true that I was already "engaged" for a very different party on the south side of the Thames, as you will probably hear next week, and rejoice; but I could not resist the temptation of going to see the present fashion, the prevailing colours, and the style of getting up a *soirée* of Hyacinths, without forcing any one to it or for it. Nothing sweeter or more gay was ever seen in London before, and certainly nothing more charming. But believe me not, go and see for yourself.

This was my nursery for dressing and decorations when I first took to the fashions, and to ladies' colours and fancies. If you go you will find there every dress, and all the styles of dress, which I chronicled from the assembly at Highgate, are perfectly true to the letter and to the last shade of colour. You will also find on the south front of the exhibition-room and on the farthest half of it from the entrance, a complete assortment of

bedding Hyacinths, not in ribbon setting as at Highgate, but flanked with the best and gayest early Tulips. On the same front, and cross-cornered fashion, you will find that brilliant sameness of dress peculiar solely to that sweet class of bulbous flowers called Polyanthus Narcissus—one of the most beautiful and melancholy of all our classic names for flowers, and just as true as Ovid has made it melancholy.

The exhibition is held in the Lapageria-house, the *Lapageria rosea* covering the whole extent of the farthest end of the house to the extent of 20 feet in width, 9 feet in height, and runs along the rafters on both sides of the span roof to the extent of 15 feet more by the time it is in bloom. Over and above all that liberty a sucker-like shoot darts up here and there from the crown of the roots in early May, and runs its course to the extent of 20 feet by the end of August, and then blooms on like the free branchy growth of the head itself till the turn of the new year—the most splendid object in cultivation, and the coldest greenhouse is fit for such another display of hanging Lilies in bells and wreaths of the richest crimson softened down with tints of gold, and of vermillion in *pudibundus* shading. There is a large slate platform down the centre of this house, and others of the like material along both sides of it, with an ample passage all round; and the whole is filled with Hyacinths, Tulips, and Narcissuses alone, barring a thick, close

edging of Musk Mimulus all round the middle platform; and a line of upright "greens" along its centre to the extent of 40 feet or so—consisting of Araucarias, as excelsa, Cookii, and the Brazilian forms of them; *Callitris australis*, the best of all "furnishing" evergreens, as no amount of bad usage, in confused passages upstairs or down, seems to harm it in the least—and what is more graceful out on the lawn in summer than a well-grown specimen of the graceful *Callitris*? Also *Dacrydium cupressinum*, with its drooping branches as if they were made of the Scotch Lycopodium selaginoides, and stuck on stems of *L. selago* itself—the latter the best remedy for all vermin which infest every variety and race of dogs, as I can testify from long experience: all these worked artistically from a centre plant of *Araucaria excelsa*, and all plunged in green moss.

All the double Hyacinths are said by this firm to do best in pots, boxes, or the open ground, "whereas the single varieties, when properly treated, rarely fail to reward the cultivator with fine spikes of flowers: therefore we recommend single Hyacinths for glasses, vases, China bowls, and for early flowering." And for all these purposes they give sound practical instructions and selected lists in their bulb catalogue, from which I have just quoted.

And now to the grand Show itself—and I will begin with *Double Red, Rose, and Pink*. *Comtesse de la Clotte* is a first-rate deep rose. Duke of Wellington the same, with a lighter red. Groot Woudet, which I found nearly forty years, as yet without a rival among double Hyacinths. Another beautiful beauty, and one of the best forcers—*Regina Victoria*, which you will find at the farthest end of the month stage, as I can now see it, is unrivalled as a waxy French Blossom of the finest shape; and Waterloo is still as good as when I first knew it—a dark rosy red, and cheap to bed by the score.

Double Whites.—Same as I said of them the previous week, with the addition of Triumph, Blandina, and Prince of Waterloo—two very telling sorts, and very good for bedding.

Double Blue, Purple, and Porcelain (or very light caste of blue).—Old Laurens Coster, again only beaten in true blues by Sir Colin Campbell; but Rembrandt (shaded mauve), and Van Speyk are both up with Sir Colin. The rest of this section as at Highgate.

Single Red.—*L'Ami du Cœur* is one of the oldest and best forcers in this class, and I should think, a first-rate bedder, and is one of the cheapest. I shall never stoop to that vulgar mistake of preferring a new plant or a new colour to an old one equally good, and perhaps better, by being cheap enough for all consciences. But I have a dread of horrid foreign names, and here is the very worst of them for one of the best of the forcing red Hyacinths—*Diebitch Sabalskanski*. Madame Hodson is also a very fine light pink of great beauty. Amy, Florence Nightingale, and Mrs. Becher Stow are still my own three greatest favourites in this class. Apellius, Cavaignac, Circe, Lina, Robert Steiger, and Schiller are all as good, or very nearly so.

Single White.—A gentleman of our Floral Committee put it to me at our last meeting thus:—"Which do you consider the best white Hyacinth?" "Madame Van der Hoop," I said at once. "Well," he said, "you are not far out—perhaps you are quite right:" but he considered Grand Vainqueur always as the very best. Now, if the two were before us for the first time and as new kinds, I would move to vote a first-class certificate for Madame Van der Hoop; and if I carried it by a majority, and he moved for the credit for Grand Vainqueur, I would second him—that would be equivalent to saying they are both best. Dolly Varden, a blush; Elfrida, another blush; Gigantea, another the same; Grande Vidette, clear white; Orondates, the clearest white; and Victoria regina, fine waxy white, are all first-rate flowers in this class. Of single Lilacs with mauve tints—Dandy and Unique are the best.

Single Blue, Purple, and Porcelain.—*Enricus* is still the best forcer in this beautiful group; Argus, Baron von Humboldt, and Baron von Tuyl the next best. Charles Dickens is very fine, and so is Couronne de Celle. Mimosa is superior to the old *L'Ami du Cœur*, which is one of the best blues for forcing and flower gardens; and the Porcelain Sceptre and General Havoclock, the next to Mimosa, both being first-rate.

Of CROCUSES—David Rizzio, Prince Albert, and Ne Plus Ultra were the best purples. Queen Victoria the best white, and Majestouse the best in Sir Walter Scott's strain, but not much larger than Sir Walter this time.

Narcissus.—*Superbissima* was the best yellow pale perianth,

and deep yellow cup; Queen of Yellows next best, and both superior to our old favourite Soliel d'Or. Gloriosa and Queen Victoria the two best whites with yellow cups, and both superior to the old Bazelman major, which held the sway so long. Maximus, or Yellow Trumpet, is a splendid thing to force and to make large beds of (it is not of the Polyanthus race); and Ajax bicolor, major, minor, and minimus or pusillus, are edging plants for spring beds which I have used for years, and found there the true pusillus, which I had been long looking out for. I still want *Narcissus papyrifera* with six to eight flowers on a spike—one of the earliest, and would pass for a Polyanthus *Narcissus*. A gentleman told me last year that Mr. Stephen Brown, of Sudbury, Suffolk, sells it, and I ordered Mr. Henderson to procure it for me. How strange that such a beautiful flower should be so little known, and so much neglected! Mr. Arthur Henderson had *Cummingia trimaculata*, with which I was familiar in 1823 and 1824 as a Conanthera, and every other bulb you could mention from that day to this, all as cheap as Potatoes, and yet country gardens are starved out of them from sheer ignorance of the existence of such things; while Stinging Nettles are run after if there is a variegated spot on a leaf of them!

Then the summer of 1859 had put the spell off the Russian and German Ivy plant *Ipomœa hederæfolia*, and it flowered out of doors against a south wall—a pale lilac *Convolvulus*-looking flower, just as Flammier painted it. When Mr. Masson travelled in Russia and the north of Europe, and wrote his notes six or seven years back, he said the nobles in Russia had backgrounds of Ivy to fill their drawing-room decorations of flowers in the dead of winter; but nobody in London could understand how they managed their Ivy, and, being then out of humour with the Russians, they did not care much about the loss of their way of growing the Ivy. But when I was last at the Clapton Nursery I met a nurseryman there from the north of Prussia, and we rode in the same bus, and there I got at the secret. He said the Ivy was never so used in as far as he travelled on his yearly rounds in Russia. But there, and with them in Germany, the *Ipomœa hederæfolia* had been time out of mind trained in narrow boxes for in-door decorations in winter; and by mixing it with flowers, and backing flowers with it, nothing in its way could possibly excel it. No matter how hot, or how dry was the air of their living-rooms, the "German Ivy," as he called it, was sure to be at home there, or elsewhere away from the frost; train it up inside their double-glazed windows, or over their mantelpieces, or against the walls anyhow, no hurt or harm, or insect ever went near it. "But you in this happy England," he concluded, "have no difficulty in greens; for everything keeps green with you, and you have no need of them." But you heard last week of the Highland welcome which this same German Ivy has met with in New York, where our Ivy has no chance against the frost; and may we not after all have a leaf out of their books?

What would you say to a *Euphorbia jacquiniæflora* trained to a trellis which had been previously Iried all over as thick as the ruins of the monastery of Monkbarne, to stand in the front drawing-room against one of the paper panels, and to last there for six weeks in splendid bloom in the dead of winter? Or how would it look in lieu of muslin curtains across the bottom of the window in your office, or rather in place of the everlasting network blinds you are so safely screened behind? Would not a thick screen of Ivy leaves, trained from a handsome box below the sill, do for blinds? and might they not also be got up higher to serve for curtains at the same time, and put you in mind of the country in the midst of London?

But what most struck me in the Pine Apple Place Nursery was the high style of culture given to all the plants, no matter where placed; the specimen stove plants in a house at the upper end of the nursery, and the house for the greenhouse specimen plants, together with the show-house, as you enter the gate, are the three best evidences of good cultivation and arrangement I ever saw so early as this in the season; and I should say that in about six weeks the New Holland house alone would be worth a journey to London to see it in bloom. But that would be the least part of my object, as I had so often seen all the best of them in bloom; it is the style, the potting, the outlines of the plants, their different sizes, their health, and the absence of all traces of insects that would amaze me, after knowing all that could have been done during the lifetime of the father of the young men who now attend to them, and the whole collection is on the self-same footing.

WEEKLY CALENDAR.

Day of M th	Day of Week.	APRIL 2—8, 1861.	WEATHER NEAR LONDON IN 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				deg. deg.			m. h.	m. h.	m. h.		m. s.	
2	Tu	EASTER TUESDAY.	29.203—29.059	48—33	S.W.	·22	35 af 5	32 af 6	21 2	(3 35	92
3	W	Gentianella	29.605—29.456	55—36	S.W.	·01	33 5	34 6	54 2	23	3 17	93
4	Th	Star of Bethlehem.	29.729—29.676	56—37	E.	—	30 5	36 6	17 3	24	3 0	94
5	F	Siberian Squill.	29.816—29.694	56—39	N.E.	·01	28 6	38 6	37 3	25	2 42	95
6	S	Soldanella.	29.828—29.788	60—30	N.E.	—	26 5	39 6	53 3	26	2 25	96
7	SUN	1st, or LOW SUNDAY. PRINCE	29.864—29.824	63—36	S.W.	—	24 5	41 6	7 4	27	2 7	97
8	M	Alyssum saxatile. [LEOP. s. 1853.]	29.807—29.436	57—35	S.W.	·01	22 5	42 6	20 4	28	1 50	98

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 56° and 36° respectively. The greatest heat, 79°, occurred on the 7th, in 1859; and the lowest cold, 16°, on the 2nd in 1838. During the period 137 days were fine, and on 101 rain fell.

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OUR ADDITIONAL NAME.



YES to the right—Noes to the left," said we, as we looked over the correspondence we had invited relative to our proposed alteration of title. When we came to the end of our division there could be no room for doubt, and we closed the counting of votes with "The Ayes have it."

Let it not be concluded, however, that those letters were few, or merely records of the writers' affirmative or negative opinion. Some were neutral and imparted the rough truth—"the title is of but little importance to

us your readers;" some availed themselves of the opportunity to say what they required and what they took no interest in; and those who wished us, as one expresses it, "to be as ye be," argued strongly and earnestly.

One said, "People wo'n't know you in a fine silk and satin dress. Stick to the corduroy and good Yorkshire broadcloth."

A second wrote, "I once tried to assist a man, as I thought, in extending his business; but I soon found all the money went for a new front, and in a few months a smash came."

A third declared, "The time-hallowed name of THE COTTAGE GARDENER is, I may say, 'familiar as household words' in many a nook and corner of old England. Why, then, change it? Why not preserve the unity of our future volumes?"

A fifth urged that, "The present title is not quite so great a misnomer as at first sight appears. In addition to cottages 'where poor men lie,' are there not 'cottages of gentility?' Besides, make what change you will, your periodical will be called 'THE COTTAGE GARDENER' in spite of you, by buyers and vendors, till the end of the chapter—and may that be long distant."

A sixth argued—but we must publish our old supporter's letter entire:—

"The pure and simple title of 'COTTAGE GARDENER,' or, as many called you, 'the Cottager,' was of itself very attractive. When you added the title of 'Country Gentleman' I did not think it an improvement of your nomenclature. But there, perhaps, was a sufficient reason, because you then entered upon pursuits and amusements which appertain to the 'Country Gentleman'; and I think that the majority of your supporters will agree that your present appropriate title will embrace all that can be collected in Horticulture, Floriculture, Agriculture, and, I may say, Omniculture, to say nothing of the 'Chronicles of the Poultry Kings.'

"I for one hope that you will not alter your pleasant name, although, by-the-by, you have just arrived at your twenty-fifth period—a time of life when ladies do begin to get uncommonly

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fidgetty about changing their names. I trust, however, that you are too well and happily domiciled to be influenced like some of them; and I hope you will not take it amiss if I heartily wish that you may retain unaltered your present attractive and homely name until you have doubled or trebled your present age, growing stouter 'typically' as you advance in years. I have little doubt that since your first appearance many a cottage gardener has, by his industry, perseverance, and your aid, become a country gentleman; but of this I am certain—that you have taught many a country gentleman the pleasure and advantage of being a cottage gardener."—W. W.

Now, strange as it may seem, these remonstrant and kindly expressed letters reconcile us to the addition to our title, for they do not foreshadow a single evil that will follow upon the change. We can assure our friends that we do not intend to dress in future "in silk and satin," and we shall stick as heretofore "to the corduroy and good Yorkshire broadcloth." Moreover, we are not "spending money" upon "a new front," nor do we think the addition to our old front will induce "a smash;" neither shall we be grieved by being called "THE COTTAGE GARDENER in spite of us," nor do we fear ceasing being "familiar as household words;" indeed every letter shows that we are associated with the "blithe blink" of their writers' "ain firesides," and that's a guarantee to our remaining there "to the end of the chapter." As to the "unity of future volumes" with their predecessors, we have made arrangements for that; and if we are "fidgetty," like ladies of "twenty-five" to "change our name," it is only because we have a good match in prospect and the preceding approval of our friends.

The chief difficulty has been to select from the matches proposed. One old friend, writing from Cheltenham—that town of connubialities—placed before us no less than fifteen which he considered eligible, and very mature deliberation only induced us to accept the name under which we this day appear.

"But what is the real inducement to the change?" asks a lady; and this letter embraces our reply—it is from one of long experience in the literary world.

"I am greatly pleased to see that you are following the right policy—namely, increasing the size of your Journal as it prospers, and thus giving the public a share in its success: this will induce still further good feeling among its subscribers. I have long felt how entirely it has outstripped its original cognomen; and it is not conducive to your own interest to call it 'THE COTTAGE GARDENER,' when, in truth, it circulates more largely than any other journal among professional gardeners and the gentle who delight in gardening. And let me appeal to your self-esteem by observing that when quoted from, there is not much dignity in your appended name."—J. S.

Now, we have not a single additional reason to add to those stated by our friend; and having thus made our public confession, we will at once conclude with this monition by a high authority, "Be not given to change, but never hesitate from changing if the purpose be honest, and the object truth."

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would not keep so well in the larder. We heard of the airing plan having been adopted by some clever scientific architect, who built a famous ice-house for a large family above ground. The gentleman for whom that house was built told us the story, and the reasons of the man of science, and that led to our own ideas and practice of some years being cast into the current; and some other fixed notions of the age might well be spared to go the same way, but none more so than the old notions for keeping ice. Ice-houses should never have been built under ground at all, that is just their ruin; and if they could be built on cradles above ground, like corn-stacks, and then sufficiently covered with non-conductors, that would give the least waste of all. Ice-stacks built on "flats," made in the face of a steep bank facing the north, is the next safest plan, and is the most practicable now; but a stack of ice at the bottom of any high ground is in the next worst position to a well of ice in the bosom of the earth.—D. BEATON.]

THE SPRING MANAGEMENT OF CARNATIONS AND PICOTEEES.

MR. BEATON is quite right in saying that the Royal Horticultural Society, since the formation on a broad and liberal basis of the Floral Committee, now, for the first time in its history, has the advantage of real practical florists; and I quite agree with him that great profit may be derived from the mutual intercourse of such and gardeners in general. Our own pages show how much this interest is increased, and that one kind of fancy encourages another. I know it has been the fashion with some (I am not sure that I do not recollect some sly tilts of D. B. himself), to decry the rage of florists for shape and smooth edge, and the other points of a florist's fancy; but let two flowers be placed together, one indifferent in a florist's qualities, the other up to the mark, and I am quite sure it will be at once seen that shape, &c., have a good deal to say to beauty. Look, friend, at Mrs. X., with a figure somewhat like a sack tied in the middle—is she as good an object to feast one's eyes upon as Mrs. C., with her slight ladylike figure, even though her rival may have plenty of colour both on her face and in her attire? And so form, I say, in the first instance, then colour afterwards.

This much by way of preface to a few remarks on the spring culture of a flower, which owes no little of its beauty to the zeal and discriminating taste of those hybridisers who have said we must have form—who have set before themselves an ideal, and have worked up to that until little is left now to be desired in that respect. It has obtained size and thickness of petal, smoothness of edge, circularity of outline and depth of bloom; but, of course, after much toil and continued weeding of inferior varieties from the list. The last season was as unfavourable to them as it was to everything else. Great difficulty was experienced in getting the layers to root; and Mr. Turner, the largest grower of them in the south of England, has hardly sent out any, I believe, until the spring, allowing them to root better before doing so: consequently those who wish to begin growing this very sweet and beautiful flower, can have no better time for adding to their collection a few favourites than the present.

Let me suppose that these have been procured (I shall add list of a few good ones in each class), and that an amateur wishes to commence their growth. Having thus caught your hare, the next thing is to see to the cooking thereof. The most certain method is to grow in pots, for wireworm and other abominations are likely to destroy your rising hopes if grown in a bed. Pots about 9 inches across are the best. Unfortunately, I have learned by bitter experience that larger-sized ones are a nuisance in every way, and do not grow the plants as well; the only advantage they possess being that they offer a broader space to layer in. The pots ought to be quite half filled with coarse drainage, and then a little moss placed on top of that. The compost should now be put in. This ought to consist of good sound yellow loam, well-rotted frame manure, and leaf mould in about equal parts, with a little road grit to keep it open. Let every handful of the compost be passed under your hand and eye, and carefully look for the foul form of a nasty yellow grub, called a wireworm, which has a disagreeable habit of getting into the centre pith of the plant, eating out all its heart, and then decamping in quest of another. Immolate him without mercy on the shrine of Flora if you catch him. This being done, fill in your pot nearly full with compost, and then prepare to put in your plants, a pair in each pot. If these have

been kept in single pots all the winter they will turn out all the better, as the less the roots are disturbed the sooner they will lay hold of their new quarters. Now fill in with compost, give the pots a good shake, and then water either with a fine rose or a syringe. They may then be placed for a week or two in some sheltered position until they become established, and after that removed to some open place. The centre of the walk I find to be as good a place as they can be in. When the flower-stem commences to run up they should be tied to stakes—one in the centre of the pot will be sufficient. Weeds must be carefully taken out, and, if the weather be dry, watering be attended to; and as the summer advances I hope to say something more with regard to their management for blooming.

They have been divided into various classes. Carnations into scarlet bizzarres, crimson bizzarres, pink and purple bizzarres, purple flakes, rose flakes, scarlet flakes; and Picotees into red, purple and rose-edged ones. By-the-by, I have noticed some (to those unacquainted with them), most misleading advertisements of seeds under each of these different heads, as if they were to be had *distinct*—whereas one pod of seed is just as likely as not to produce every one of the kinds named, so it really only answers the purpose of selling a dozen packets of seeds instead of one. I have also remarked seeds of *Pelargonium* advertised with the names of the flowers the seed has been saved from. But unless these have been carefully crossed, their having one parent good is very little use, and no guarantee whatever in any case that the seedling will partake of the parents' character.

I now give a list of some really good kinds, and such as are of good constitution; my object being to encourage beginners, and not to set them to grow varieties which baffle even old cultivators.

CARNATIONS.

Scarlet Bizzarres.	Scarlet Flakes.
Captain Thompson (Puxley)	Defiance (Puxley)
Mr. Ainsworth (Holland)	Mars (Puxley)
Oliver Goldsmith (Turner)	Sir H. Havelock (Puxley)
William Pitt (Puxley)	Sportsman (Hedderley)
Pink and Purple Bizzarres.	Purple Flakes.
Falconbridge (May)	Ascendant (May)
Lady of the Lake (Hale)	Earl Stamford (Elliot)
Sarah Payne (Puxley)	Mayor of Oldham (Hepworth)
Shakespeare (Puxley)	Squire Trow (Jackson)
Crimson Bizzarres.	Rose Flakes.
Chancellor (Puxley)	Aglala (May)
Orestes (Puxley)	King John (May)
Premier (Puxley)	Poor Tom (May)
Sir George Brown (Puxley)	Nymph (Puxley)

PICOTEEES.

Red-edged.	Purple-edged.
Ada Mary (Smith)	John Linton (Headley)
Cedo Nulli (Headley)	Rival Purple (Headley)
Dr. Pittman (Turner)	National (Holland)
Sametta (Smith)	Lord Nelson (Norman)
Mrs. Norman (Norman)	
Ne Plus Ultra (Headley)	
Penelope (Turner)	
Purple-edged.	Rose and Scarlet-edged.
Amy Robart (Dodwell)	Alice (Hoyle)
Beaie (Turner)	Crystal (Smith)
Eliza (Payne)	Lady Greville (Turner)
	Rev. A. Matthews (Holland)
	Mrs. Barnard (Barnard)
	Venus (Headley)

THE LITTLE MARKET-GARDENER.

OR,

HOW TO CULTIVATE AN ACRE OF LAND WHEN PROFIT IS THE CHIEF AIM, AND SHOWING HOW A FAMILY MAY BE SUPPORTED AND SOMETHING PUT BY FOR A RAINY DAY.

POTATOES.

As soon as March comes in it is time to plant the second early Potatoes. The best sorts that I know of are, what we call in Shropshire, Knapsacks, Early Flourballs, Sportsmen, and Liverpool Merchants. Having purchased about fourteen pecks of the best sorts you can procure, mark out fourteen rods of the land that you have double dug, and plant the Potatoes 2 feet from row to row and about 8 inches or 9 inches from set to set in the row. You may plant them how you like—with spade, fork, or dibble, so that you do not plant them too deep. About 4 inches is deep enough for this time of year, and I believe this to be as good a time as any; and I have planted them at all times from October to July. In 1856 I obtained seventy-two bags to the acre from Potatoes

the 22nd of June. Do not plant large sets, or whole, unless they are very small. If you can get them, small-tatoes that will weigh about 1½ oz. each are the best, though the middle, minding to cut through the crown. If large Potatoes do not let the sets have more than one each, there being nothing worse for the Potato produce much haulm. I intend writing a very long chapter tatoes growing when I am not quite so busy. I will then how I grew thirty-one pecks to the rod in 1859, and pecks to the rod upon the same land in 1860, some of totes weighing 1½ lb. each. I placed thirty Potatoes in row that weighed 25 lbs., and that same land has had on every year for twenty years.

LATE PEAS.

ime in March, or the first week in April, mark out two and, not too close to hedges, and dig about one ton of nure into it. If you put them in with the spade, as I for the early Peas, let the rows be about 2 feet apart, ot sow them too thick in the rows. I put mine in with a iron, the same as is used for dibbling horse Beans, and etter in that way than any way I have ever seen. I make about 14 inches apart, and the holes about 3 inches or from each other, and about 2 inches or 3 inches deep, the Peas one in each hole. The best sorts that I have re the *Bellamy's Early Green Marrow*, the *Champion ad*, and the *Victoria Marrow*.

PARSNIPS.

should be sown as soon as possible in March. Let the double dug, the same as advised for Potatoes, not too trees or hedges: and if you have a good tank for the and such sorts of slops, pour a good bucketful or two bottom of every trench. Mark out the land, about one four-foot-wide beds, and sow four rows upon each ake the rows with the back of a rake just deep enough the seeds, and sow a row of Radishes between each two l up each outside.

CARROTS.

s may also be sown in March, if the land is not too stiff if it is they would be better sown about the middle or d of April, and then dig a good dressing of charred into the land, and mind to sow the seed as soon as the ug. If it is light or sandy land it does not matter how arch you sow them. Mark out one rod of land in the f the garden and away from trees; dig it deep and if you put a good dressing of soot and dig it in, so much r. Mark it out into three-foot-six-inches-wide beds, the one half with Early Horn and the other half with sort you like best. I always find the Altringham to Sow five rows of Early Horn upon each bed; but four l be thick enough for the large sorts, and you may sow Radishes between each two rows of the large ones, but cen the Early Horn.

ONIONS AND LEEKS.

in March mark out six rods and a half of land almost e, so that it is not too much shaded. Put a good dress- nure upon half a rod that is the farthest from the outside eeks; dig it in deep and well, mark the ground out into t-six-inches-wide beds, and sow the Leeks broadcast, and thick. Then dig the other six rods. Then take about s of very rotten manure (after you have marked it out e-foot-six-inches-wide beds, and trod them down pretty nd spread upon the beds regularly and evenly. Beat ith the back of the spade; then sprinkle it over about nch, or 1 inch, thick with soil out of the walks. Mark ows upon each bed, and sow about 1 oz. of Onion seed 10 yards length of bed.

COLI, SAVOY, BORECOLE, AND CABBAGE PLANTS.

the middle of March mark out three rods of your best rders to grow plants for sale—such as Broccoli, Bore- oys, and Cabbages; dig it over, and sow the seeds as n, not too thickly. If the land is very poor, give it a ming of charred rubbish.

EARLY POTATOES.

the last week in March will be time to plant your saved Kidney Potatoes. Plant them with the spade

about 18 inches from row to row, and about 7 inches or 8 inches from each other in the row, laying them carefully in the trench with their sprouts upwards, and mind not to break the sprouts off. All that are not nicely sprouted should be put on one side, and planted by themselves, to grow seed for another year.—THOS. JONES.

(To be continued.)

THE CENTRE BED OF A FLOWER GARDEN.

THE garden is about 110 feet by 60 feet, and enclosed on the east and south by a wall covered with Magnolias, &c.; on the north by a range of hothouse, conservatory and vinery; on the west by a wall with arches, through which the rosery and park beyond are seen. There are about forty-eight beds of various forms converging towards the centre, and advice is wanted as to whether the centre bed should be formed of three tiers, what is the best to form the outside of each tier, and how they should be planted to give the best effect through the summer? The bed may be 10 feet across each way. Or would a wooden or wire stand of lower and upper baskets be recommended in preference? —ROSA.

[The centre bed of so large a flower garden as yours, where forty-eight beds converge to the middle bed, must not be raised in two or three steps as you contemplate, but be as nearly flat as possible, say a ten-foot-in-diameter bed, to be raised 6 inches in the centre. Neither must it be planted with scarlet or yellow flowers, nor strong pink-coloured nor purple flowers, nor have any kind of standard plants in it; and the reason is that a tall raised centre, or a centre of very strong colours, would arrest the eye, or attract it too much to the prejudice of all the off-side beds viewed from any point all round it. The best way to plant your centre bed is, either to fill it with mixed flowers of all colours and edge it with variegated Alyssum, or with some variegated plant; or to plant it with one, two, or three kinds of variegated Geraniums in separate rounds, and to edge them with the dark blue *Lobelia speciosa*.]

ARRANGEMENT OF CROCUSES.

MANY of your readers besides myself will thank Mr. Beaton for his remarks on the Crocus. I have several beds done somewhat in the manner described, but I shall now be able to improve them. For instance: I had used in some cases the *Cloth of Gold* yellow, not being aware it was so much earlier than others. By the time the others are in their prime this is going off, and the effect is much impaired. Now that I know the bulbs can be moved without harm immediately after flowering, I shall alter this.

Nothing in the whole world of gardening delights me more than the pot culture of the early bulbs for in-door decoration. For a mere novice I think I am tolerably successful; but I have a difficulty. The Crocus bulbs always rot away after producing four or five little bulbs. The Tulips and Narcissi divide themselves into three or four, and neither these nor Crocuses will flower next year. Does this arise from bad management? Can it be obviated? I was surprised to learn there was a larger and finer Crocus than *Sir Walter Scott*; but I shall look forward to a trial of *Majestouse* next year. I had upwards of nine dozen blossoms from five bulbs of the *large yellows* in one pot. Is not this an unusual number? It was a blaze of beauty.—H. A.

[Of course, in planting lines or beds of mixed Crocuses, all the kinds should be in bloom at the same time. We cannot give an opinion as to the cause of the bulbs decaying until we know the nature of your soil and the mode of culture.]

I AM very much dissatisfied with the manner in which my gardener has planted the Crocuses, and I have seen with great delight a chapter on the "Arrangement of Crocuses;" but when I came to study it, it seems to me so confused that I can make nothing of it. You will be conferring a great boon on a great many of your readers if you would just give us a few intelligible hints. Mr. Beaton is generally sufficiently intelligible, but this seems to have been written in a hurry.—A SUBSCRIBER AND ADMIRER.

[Begin with the A, B, C of planting Crocuses, and let A stand for white and all shades of white, B for yellow, and C for purple,

GOOSEBERRY CATERPILLARS (*A Constant Reader*).—In our Number for May 14th we mentioned dusting them with White Hellebore powder. Covering over the soil with tan about the roots prevents the larvæ descending into it.

VINE BUNCHES ULCERATED (*P.*).—Such appearances are generally the result of a too moist, close atmosphere, and want of regular root action, but is no doubt often the result of a want of ripening of the wood the previous year. When we have met with it, however, we have thought it to be caused by damp and cold. The fruit crops in general are unsatisfactory this season.

VEGETABLE MARROWS, &c. (*W. Dixon*).—Your Vegetable Marrows will do very well on long poles over an arch, over an arbour, or against a wall. Train to the height, or nearly so, and if on a pole then stop, and stop the side shoots at every other joint. If on an arbour, let them run with but little stopping. We have had them on a single pole, the main shoot carefully fastened to it, and all the others shortened about 18 inches long; but the fruit on them must be cut before they are over-heavy. A six-inch pot will do well for the plants you mention; but they will become drawn in a sitting-room, unless plenty of air is given. After the 1st of June they will do better on the window-ledge out of doors.

GERANIUM LEAVES (*Sarriense*).—The leaves of your seedlings tell that you have got into the strain of Baron Hugel and Bishopstow scarlets; but unless your superior climate assists you, you are so late in this field as to have little chance in the market against English breeders, who have been working in the same strain these ten years past.

PLANTING FLOWER-BEDS (*T. M.*).—Plant the six ray-beds in three match pairs: every two of them opposite each other plant with the same kind of plant, as two with yellow Calceolarias, two with some variegated Geranium, and two with Tom Thumb, or some dwarf scarlet Geranium; but as you gave no index to your ways of procuring the plants, the above is merely to show the right way to plant such beds standing apart in a group round a centre bed.

CUPRESSUS MACROCARPA (*J. S.*).—The discordant results of last winter's influence over the Conifers is very remarkable. On the chalk hills near Winchester, Cupressus macrocarpa is quite uninjured, whilst that of your friend, near Worcester, "has been nearly destroyed." No application to its roots, except water in very dry weather, will be of any use. In such dry weather syringing the stem and branches might be useful. If it vegetates let there be no pruning away of the dead parts until late in the summer.

NAMES OF PLANTS (*D.*).—Pyrus aria, the White Beam tree. (*A. A.*).—1, Weigela amabilis; 2, Calycanthus floridus; 3, Viburnum lantana; 4 and 5 appear to be, the former a Cornus, the latter a Ribes, probably C. sanguineum and R. alpinum; but there are no flowers. (*Hibiscus*).—The Fern is Ceteisacis officinarum. The small red flower, though much crushed, seems to be Alonsoa Warczewiczii. The other leaf is not recognisable. (*S. Devon*).—1, Potentilla tormentilla; 2, Lysimachia nemorum.

FLOWER SHOWS FOR 1861.

JUNE 5th and 6th. ROYAL HORTICULTURAL SOCIETY. (Plants and Fruit.)
Garden Superintendent, G. Eyles.
JUNE 5th. PORTSEA ISLAND. Sec., H. Hollingsworth, Southsea.
JUNE 11th. ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY. (Plants and Flowers.) Sec., W. R. Hobbs.
JUNE 12th and 13th. YORK. Sec., J. Wilson.
JUNE 19th and 20th. BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY. Sec., E. Carpenter.
JUNE 25th. ROMFORD. (Plants, Flowers, and Fruit.) Sec., A. Cooper, Romford.
JULY 3rd. PORTSEA ISLAND. Sec., H. Hollingsworth, Southsea.
JULY 6th. CRYSTAL PALACE. (Rose Show.) Sec., W. Houghton.
JULY 10th. ROYAL HORTICULTURAL SOCIETY. (Rose Show.) Garden Superintendent, G. Eyles.
JULY 18th. TOWCESTER FLORAL AND HORTICULTURAL SOCIETY. Sec., T. B. Rodhouse, Towcester.
JULY 18th. PRESCOT. Sec., J. Beesley.
AUGUST 9th. BELFAST ROYAL BOTANIC AND HORTICULTURAL SOCIETY. (Plants, Fruits, and Vegetables.) Sec., George A. Carruthers.
AUGUST 14th. PORTSEA ISLAND. Sec., H. Hollingsworth, Southsea.
SEPTEMBER 2nd. HECKMONDWIKE. (Floral, Horticultural, and Agricultural.) Sec., G. Kelley, Heckmondwike.
SEPTEMBER 4th and 5th. CRYSTAL PALACE. (Dahlias, Cut Flowers of other descriptions, and Fruit.) Sec., W. Houghton.
SEPTEMBER 11th. ROYAL HORTICULTURAL SOCIETY. (Dahlias and other Cut Flowers.) Garden Superintendent, G. Eyles.
SEPTEMBER 18th and 19th. BRIGHTON AND SUSSEX. Sec., E. CARPENTER.
NOVEMBER 6th and 7th. ROYAL HORTICULTURAL SOCIETY. (Fruit and Chrysanthemums.) Garden Superintendent, G. Eyles.
NOVEMBER 12th and 13th. STOKE NEWINGTON CHRYSANTHEMUM SOCIETY. Sec., W. T. Howe.
NOVEMBER 14th and 15th. CRYSTAL PALACE. (Chrysanthemum Show.) Sec., W. Houghton.
N.B.—Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY SHOWS.

JUNE 4th, 5th, and 6th. BATH AND WEST OF ENGLAND. Steward, S. Pitman, Esq. Entries close May 4th.
JUNE 19th. THORNE. Sec., Mr. Joseph Richardson. Entries close June 12th.
JUNE 19th, 20th, and 21st. COALBROOKDALE. Secs., Messrs. J. B. Chune, and Henry Boycroft, Coalbrookdale.
JUNE 25th. ESSEX. Sec., Mr. W. R. Emson, Slough House, Halstead, Essex.
JUNE 28th. DRIFFIELD. Sec., Mr. R. Davison. Entries close June 22nd.
JUNE 28th and 29th. TAUNTON. Sec., Mr. Charles Ballance. Entries close June 14th.
JULY 3rd, 4th, and 5th. BLACKPOOL AND WEST LANCASHIRE. Sec., Mr. E. Fowler, Jun., Market Street, Blackpool. Entries close June 30th.
JULY 18th. PRESCOT. Sec., Mr. J. Beesley.
AUGUST 26th, 27th, 28th, and 29th. CRYSTAL PALACE SUMMER SHOW. Sec., Mr. W. Houghton.

SEPTEMBER 3rd. POCKLINGTON (Yorkshire.) Sec., Mr. Thomas Grant. Entries close August 28th.
SEPTEMBER 24th. BRIDGEMORE. Sec., R. Taylor, Bridgnorth.
DECEMBER 2nd, 3rd, 4th, and 5th. BIRMINGHAM. Sec., Mr. J. B. Lythall, 14, Temple Street. Entries close November 1st.
DECEMBER 11th, 12th, 13th, and 14th. CRYSTAL PALACE WINTER SHOW. Sec., Mr. W. Houghton.

THINNING-OUT POULTRY.

WE left off at "exhibition fowls." Excellence, not to say perfection, will always be the exception in poultry as in everything else. The Lord Rivers, who was so well known for his love of greyhounds, and his almost uniform success at coursing meetings, was one day asked the secret of it. He said, "He bred well, trained well, and hung well." We believe this to be necessary wherever there is to be great competition.

We have passed the breeding stages, and we now have a yard full of promising chickens, rather an *embarras de richesses*—too many to exhibit, too many to keep, far too good to kill, and much too valuable to sell at market price. "What am I to do?" says the owner. "I wish the *Poultry Chronicle* would advise me." So it will, respected reader, and, it may be, fair correspondent. We are not intending to tell you that there is a place in London where they will make their weights in gold, nor that there is a person somewhere who will buy any number at any price; we are simply bent on advising you to ask the advice of a friend or neighbour about your birds. It is astonishing how easily they will overcome all your difficulties.

We will go with you among your Spanish chickens. Your arrangement is an admirable one, and having, as they have, a cottage run, we do not wonder at their looking so well. Now they are brought together, be good enough to show us your best. You cannot. Well, then, we will show you your worst. Kindly tell your lodge-keeper, or your labourer's wife, or whoever has charge of them, to catch up any chicken we point out. Look at that young Spanish cock, his comb is certainly not straight; now that scarcely perceptible twist will never be less, it may be larger, it will become more objectionable, but it will never disappear, and it will very likely bring the comb over with it. Catch him up, and those three pullets you say you consider the most promising. That you have been taught to look for long, thin, skinny faces, and you have it in them. So you have, but they are result of weakness and ill health; these have never grown as they should. If thin skinny faces are to be considered valuable in Spanish pullets—and they unquestionably are—they must be allied with first-rate condition, and the pullet that looks "all skin and grief" must be as plump as a partridge when handled. Look at those pullets, younger by some weeks, their faces are not only skinny, but they are becoming white. Bad comb cock again, take him away. Very seedy pullets, take them away. This would be the burden of the song, and although you probably might in some instances have cause for remonstrance, yet you would be surprised with what facility a judge—without leaning, partiality, or favour—can divide and condemn chickens from a run, where the owner could see only perfection.

Having mentioned Spanish as the first, we will make a few more remarks on that breed. There was last season a marked increase in the number of amateurs of these beautiful birds, and there was a large sale for them at very good prices. They were also better in quality than they had been for some years. There has been an unusual demand for eggs, and, among the many chickens hatched, some will perplex their owners.

Those to whom poultry-keeping is a mere pastime, and with whom the expense is unimportant, can of course do as they like, and they may not care for our scribbles; but to those who wish to combine the fancy and the pocket, we say, Beware of pets, and beware of fancies. (Let neither your wife nor daughters go with you when you have hardened your heart, and determined to destroy some. There is a very kind-hearted, nice, blue-eyed girl who will not hear of the chickens she reared being killed; she is very mild, but she speaks with great firmness when she says she *will not* eat them if they are. Her dark sister says she hasn't patience with papa, and he may rear his early chickens himself next year. The wife and mother thinks it is unkind to tease the girls, and try their dispositions. The smaller ones don't care for the big chickens; but there are two or three little dears—one with a broken wing, and another with a crooked bill—that shall not be taken away; and when mischief says, Stop till they are gone to bed, they declare they will take the darling's ro with them.)

The *Ficus repens*—a very different plant from the repens so called, against the back wall of the specimen stove, sticks to it like Ivy, and hangs out from it as regularly as the ears in harvest, just like Sweet-Bay leaves—is the finest screen for a back wall I ever saw. Here everything good and handsome is grown as a specimen, just as if it were for the Show. *Medinilla magnifica* in full bloom—and if the Messrs. Veitch had never introduced another plant, they might be proud of their success through this plant alone. *Euphorbia jacquiniæflora*, lots of, in bloom. *Gordonia javanica*, an excellent forcing Tea plant in full bloom. *Ardisia undulata*, plants by the hundreds, and the white or yellow-berried kind of it grafted just as freely, and all for decorating the dinner-tables in London with their holly-like berries. One grower near London grows one thousand *Ardisia undulata* each year for the London market. *Hippeastrum reticulatum*, which I feared was dead and gone “lang sync,” was there sure as certain, and not so high-priced as one might think, considering it is the best and the scarcest of all our ancient families. We had a rumpus with some one in our early days about the reticulata of this very plant, he saying the reticulation, or the network-like veins, were in the leaves; and we, the contrary—that the net was on the flower, which is of a light crimson colour, with a white star round the eye, and a broad white longitudinal band down the centre of each leaf, and a large pot of it would make a better variegated specimen for exhibition than many that have been tried. The white variegated *Agapanthus* is getting a lift here to hurry it on in growth, being a very slow goer, but a beautiful thing when of a large leafy size.

Begonias all of the best sections, and the crosses from Marshallii by Rex, have a fleece of snow-like spots all over the leaves on both sides of the milky way—the zone or sonata of our “Proceedings.” I was very much gratified to hear Mr. Henderson say that the report of this class by Mr. Moore, and the selection by the Floral Committee, were both most excellent and trustworthy; but we owe it all to the high style in which Mr. Eyles and his men got them up for examination; and equally so to hear the Baron Rothschild in his garden, near Paris, had large edgings of both Rex and Marshallii last season, and that they were the most exotic sight on the whole continent.

The greenhouse specimen-house is full of all the best leading plants recently potted and making rapid growth—really a sight of itself. A large specimen of *Brachysema longifolia* is a perfect mass of scarlet pea-blossoms, and is one of the few plants of that style which sets its flower-buds in the autumn, and may be slightly forced to come in in January, or any time in the spring. *Pultenaea subumbellata* in full bloom; *Loddigesia bellidifolia* the same; *Acacia rotundifolia*, very slender and drooping, is a fit subject for hanging-baskets, and such are in great demand; *Aphelaxis*, of sorts, bursting their rich, shining, crimson flower-buds, for “everlastings;” *Epaeris ceriflora*, a white, early-flowering species, the hardiest and most useful of the family, as it may be forced very gently to come in any time in winter, and all of them may be forced the same way from November; *Acacia Drummondii*, in whole dozens, and all bloom as free as Crocuses, but never seed unless the plant is half-starved, and not fit to be seen; *Platylobium parviflorum*, one mass of yellow and brown blossoms. In another house were a lot of *Araucaria Cookii* recently sent over by Mr. Moore, of the colonial botanic garden at Sidney. When I first knew Mr. Moore he was a little fellow in the seed-shop at Pine Apple Place, and getting no more shillings a-week than he now gets hundreds a-year, and richly deserves them for his services in the good cause. This house was full of rare useful things, from the *Arabis variegata*, in hundreds, for edgings to *Blandfordia nobilis*—one of the finest Australian bulb-like plants. *Anopterus glandulosus* with its long upright spikes of *Arbutus*-like blossoms, which come early in spring; *Dyckia rariflora*, a scarlet representative of the American Aloe, which would do for an age in a No. 48-pot, and bloom every year of its life; *Nerines*, *Pentlandias*, *Trilliums*, *Camassias*, *Coburgias*, *Alströmarias*, *Cladanthus*, *Phædranassa*, *Zephyranthes*, *Gloriosas*, *Griffinias*, *Hæmanthi*, *Cypellas*, *Calochortus*, *Cyrtanthus*, *Ismenes*, *Lycoris*, *Habranthus*, *Rigidellas*, *Tritelejas*, *Bomareas*, *Bravos*, *Milla biflora* at last, *Brodias*, with *Caladiums*, *Crinums*, *Amaryllises*, *Cypripediums*, *Eucharis*, *Vallota* and many others; and all with more or less kinds of species and varieties of the first order of merit; but they are not bedding plants, and therefore not sought after, but by a few knowing customers who delight in having some of all the best flowers of the creation.

In a large three-spanned-roofed house were the *Gloxinias* all showing for bloom to meet the early demand of the London

season. Great quantities of the Indian Fig, *Ficus elastica*—the aristocratic London plant for the front drawing-rooms; all the finer Cannas, of which bicolor and iridiflora—the former for its leaves, the other for its splendid flowers—are the most deserving; *Hibbeclinium aurantiacum*, a weedy-looking plant, with the richest of all yellow shades of colour; the *Vitellinum*, or yolk-of-egg colour, and even the true Magenta colour—the only plant we yet know which produces the true Magenta, and that is the colour of the flower-stalks of the American Poke, or *Phytolaca decandra*—a very old shrubby plant, which every one who raises seedlings ought to grow to compare his seedlings with in the autumn, as Magenta is now the great want of the day.

The old stove is brimful of Ferns and fineries, of which *Platycerium grande* is the most out-of-the-way; but I shall have a new start with it shortly—a far better way of doing it than at present. In the old Orchid-house is a large planted-out climber, which few have yet done half so well or even know of. It is *Clerodendron speciosissimum*, the fellow to splendens, but requires a very different treatment; but I should get what I often require if I were to enlarge on it at the tail of a story like this. *Bougainvillea spectabilis*, the highest mauve; *Dracenas* by the scores for dinner-tables; *Caladiums* by the dozens. But who can bide all this? Let me, however, say of a recent cut from Paris, that *Dracena congesta* is there seen in all their best shops and houses, as the *Acacia lophantha* is seen down at Canterbury, the Indian Fig in London, or the Aaron's Beard in country cottages—a universal favourite, and graceful-looking Pampas-Grass-like leaves. Also *Wellingtonias* out in bushel baskets 2 feet across, to be planted baskets and all, and no hurt or cramping to the roots. I think we owe this most excellent plan to Mr. Rivers, who, with M. Naudin, calls “geothermal” earth *heat*, while the true meaning of the word is just what we all want—and that is earth *warmth*. D. BEATON.

ICE-HOUSE VENTILATION.

HAVING observed the remarks upon ice-houses in THE COTTAGE GARDENER of March 19th, “A SUBSCRIBER” would feel much obliged by having some information upon the best means of ventilating an ice-house, which is constructed thus:—The well is sunk about 5 feet, surrounded by two brick walls with a space between them. That part of the outer wall above the surface, about 5 feet, is surrounded by a bank of clay. The well is about 10 feet across. The roof is very steep, and has about a yard thickness of straw upon it. The ice is broken up small, and piled up into a cone. The ice is placed upon small pieces of wood, so that there may be a cavity underneath: at the bottom there is a trap-drain, to avoid having a current of air from below. The well is lined with straw, so that the moisture may run down the straws to the drain. There are three doors facing the north. The spaces between them are filled up by sand. No air can enter. Could anything be done now that the ice is in? It would be a great convenience if any method could be advised so as to avoid removing the sand every time the ice is wanted—and last year there was considerable waste.—E. T.

[The sand and straw are the causes of the loss of ice. If iron hurdles which would keep out cats and dogs were where the doors now are, and all the sand were removed, and a small opening were made in the highest part of the dome of the roof, with a cap supported a little above the opening to prevent the rain from getting in, a current of air would pass from the outer door (and no second door is at all necessary), through the passage and out at the top of the dome. Then there should be 6 inches of very loose straw put on the top of the ice to keep the current from the surface—not between the ice and the brickwork, which is a wrong idea altogether, and has melted ten times more ice than ever it could save. Every inch of the straw is soon full of confined air damped to the point of saturation, and that is what melts the ice. The longer and the drier the passage is, the faster the vapour is carried off from the ice. Dry air in rapid motion has a thirsting power of sucking up damp, and damp warmed by confined air into vapour is always, and in all places, more destructive to ice than the blast of a furnace. That we have ourselves proved over and over again; and we have cured one of the largest and worst ice-houses in the kingdom by the same means as we now propose to you. For ten years previously the family derived no more use of the ice in that ice-house than the keeping of things which

and plant them thus—A, B, A, C, A—B, A, C, A—B, A, C, A. That is how to plant Queen Victoria (A), Dutch Large Yellow (B), and Prince Albert (C). There is a white on each side of the yellow and on each side of the purple, and that rule is to apply to any number of shades of all the Crocuses.

Sir Walter Scott is a white, with streaks in it: therefore call it A1, and plant it, like A Queen Victoria, at regular distances.

Majestense is a white, with more streaks than A1, call it A2, and plant it also at equal distances, as on each side of yellow and on each side of purple.

Marie d'Ecosse is a white, with most streaks, call it A3, and plant it at equal distances in your row. If you have a large yellow and a small yellow, mark the latter B1; and if you have

three or four shades of purple call them all C's. The best of them plain C, second best C1, third best C2, fourth best C3. See that all the four are at equal distances apart, each with a white on each side of it. Then, if your row is a mile long, you have doubled the number of whites in it, no kind is in two patches together, and every individual kind stands at regular distances along the line.]

PARISIAN MODE OF ROASTING APPLES.—Select the large Apples; scoop out the core without cutting quite through; fill the hollow with butter and fine soft sugar; let them roast in a slow oven, and serve up with the syrup.

NEW PLANTS FROM JAPAN.

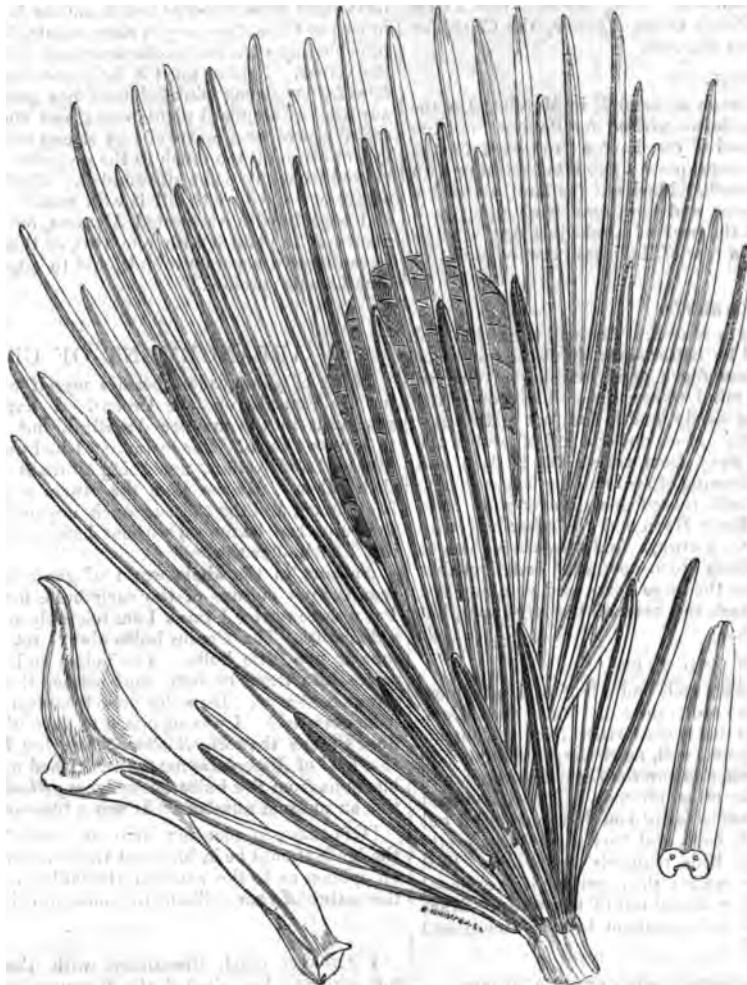
SCIADOPITYS VERTICILLATA—THE PARASOL FIB.

FOR nearly three hundred years the empire of Japan was till lately closed against all European nations except the Dutch, and it is consequently through them or their employes that any information has hitherto been acquired respecting this remarkable country, its people, and products. Had that communication been free and general, our knowledge would have been much more extensive; and we might, through a people so enterprising and intelligent as the Dutch, have become possessed of as complete a history of Japan as of any other region of the world. But even the Dutch enjoyed only a limited intercourse, their trading being confined exclusively to the harbour of Nagasaki. In consideration of this permission to trade with the Japanese, the Dutch were compelled to send an embassy annually to the Imperial Court at Yeddo; and it is to the scientific men who accompanied this embassy, that we are indebted for what little knowledge we have of the plants and natural products of the empire. Those who have written on the subject have generally been employed as physicians to the Dutch embassy. Kämpfer, a native of Westphalia, arrived at Nagasaki in that capacity in September, 1690, and, after residing two years, left in November, 1692. Thunberg, a Swede, pupil, and subsequently successor to the great Linnaeus, was also attached as physician to one of these embassies, and arrived at Nagasaki in 1775. To him we are indebted for a pretty extensive knowledge of the plants of Japan: but beyond dried specimens of the plants he describes in his "Flora Japonica" neither he nor Kämpfer contributed any

thing to the living collections in European gardens. Dr. Siebol also a physician, who has resided several years in Japan, has hitherto been the only European who has introduced living plants of Japan into Europe; among which some species

Liliums and of Camellias are familiar examples.

The circumscribed limits to which the residence of all the men was confined operated against the acquiring a more extensive knowledge of the country and its productions; and hence it is that some of the grandest trees and shrubs of Japan remain unknown except in reputation. It has therefore, been reserved to the enterprise of Mr. J. Gould Veitch (son of Mr. J. Veitch, of the Exotic Nursery, Chelsea), a gentleman young in years, but mature in knowledge and experience in plants, to enjoy the well-merited reputation of being the first to introduce some of the finest trees of that remarkable country. To enable him to do this Mr. J. G. Veitch has possessed advantages which no previous travellers ever had. Arriving in the country after the opening of several ports, and under the most influential patronage, and attached as he was, as a botanist, to the consular establishment at Yeddo, he occupied a position of which he



Shoot and Young Cone of *Sciadopitys verticillata*, natural size, drawn by Mr. Fitch from specimens sent home by Mr. J. G. Veitch.

was not slow to take every advantage, and as such he had the privilege to penetrate into the country and make excursions which were denied to all other Europeans except to such as were attached to the establishment. It was thus that he was permitted to join in the pilgrimage to Mount Fusi Yama, a privilege in which no European ever before participated.

fer and Thunberg were content to look upon it at a distance and to listen with unsatiated curiosity to the legends are associated with it, and the rapturous terms in which natives describe it, which are to the effect, as Kämpfer says, "poets could words, nor skill and sense sufficient to enter this mountain; they think it a dream." Mr. Fitch, however, as to its summit, profiting by opportunity, secured himself of a fine view of the mountain, which he was enabled to do in his

young the distance made by Mr. Fitch, the object of this illustration is one of unusual interest, described by a "the finest Japan." It is a *Sciadopitys verticillata*, the Parasol Japan, and is as far north as Sado, where the thermometer is below zero; there cannot, therefore, be a doubt that it grows perfectly, and capable of standing the of our severest frosts.

The tree attains a height of 150 feet, and is a erect pyramidal growth with light, wide-spreading branches, thickly set, retaining its foliage to the ground. The leaves are from 1 to 4 inches long and two lines broad, arranged in

of a yellowish-green colour, forming on the extremity a parasol of leaves 5 inches or 6 inches in diameter. These parasols remain from three to four years green, then they fall from three to four of them at intervals of an annual

shoot on each branch. From the figures so skilfully drawn by our artist, Mr. Fitch, an opinion will be formed of the size and shape of the cones. The flowers of the tree are dioecious, and appear at the beginning of summer, and the females preserve

their cones till the spring following. These, from the specimens sent home, appear to be produced in clusters, and are not unlike those of *Pinus cembra*. Each scale bears on its superior surface seven seeds, which are of an elliptical shape, and are bordered with a membranous wing.

The Parasol Fir is one of the most beautiful Conifers of Japan, and one of the most rare. It is found extensively in the eastern parts of Nippon, on Mount Kōjisan, in the province of Kii. Mr. J. G. Veitch discovered it after his return from Fusi Yama, in the middle of September, 1860, growing in the neighbourhood of Kanagawa, and the seeds arrived in England on the 27th of November following; this being the first introduction of *Sciadopitys verticillata* into this country.

The tree is called by the Japanese *Kōjima*, and by the Chinese *Kin sjo*, the latter signifying Golden Pine, from the yellowish-green colour of the leaves. The scientific name of the genus was established by Zuccarini, and is derived

from the Greek *skias*, a parasol, and *pyrus* a Fir tree, the leaves being arranged, as we have already stated, in the form of a parasol on the extremities of the shoots. It is our intention to continue notices of these new introductions.—II.



Cones of *Sciadopitys verticillata*, natural size, drawn by Mr. Fitch, from specimens sent home by Mr. J. G. Veitch.

HERTFORD NURSERIES.

MR. E. P. FRANCIS.

I crossed the lines by rail taking up so much time, I stayed at Hertford for the night after leaving Sawbridgeworth, and called on my old friend Mr. Francis in the morning. The first appearance of these two famed nurseries presented plenty of contrast and comparison. At Sawbridgeworth new glass has been so much in vogue, that a person who knew the ten years ago would scarcely recognise it now. At Hertford the exception of a small vinery, the houses are much more modern as they were twenty years ago. At Sawbridgeworth the old buildings were struck with great ranges of glass, the wood scarcely seen to the large squares of glass used, almost all being

20 inches by 12 inches. At Hertford you meet with what, ere long, will only be mementos of the past—houses formed with sliding sashes, heavy rafters, and the sash-bars thick between them, and supplied with glass of all sizes, and triangular and other shapes, reminding one of times when glass was a serious consideration. And yet a very slight survey was sufficient to show, that good workmanlike results are much more dependant on the genius of the workman than on the finest tools or the most perfect machinery. Without, perhaps, clearly intending it from the first, the bent of circumstances is leading Mr. Francis gradually to act more and more on the division-of-labour principle;

and this, no doubt, has rendered him more careless of building glass houses, and more bent on extending his grounds from a few acres, which I recollect them to have been, to a fair-sized farm which they are now threatening to become.

I found one house next the street, or road, well supplied with forced bulbs, Chinese Primulas in fine varieties and looking very gay and nice, independently of the little bits of glass in the front sashes. Another lean-to house was appropriated to Camellias opening their buds. Another was filled with Azaleas in fine specimen plants—from those in large pots and huge size, to beautiful compact little specimens in eight-inch pots or so, and splendidly set with buds, the points being all hard, which is more than can be said of Azaleas generally this season.

What surprised me most of all were the fine Rose plants in pots that have been so much admired at metropolitan exhibitions, just beginning to break their buds on the 8th of February, *squeezed thickly together in one of these dark lean-to houses*. More room would, ere long, have to be found for them by removing some to another similar-sized house; but at the thinnest, the plants even when in bloom must stand thickly together, and work must be done in these old-fashioned, but clean, tidy houses heated with old flues—the half of which work, if wanted from some of our modern gardeners with all the appliances of fine light houses, and all the improvements in heating by hot water, would lead them to indulge in no end of complaints and grumbling. It is all very well in large establishments to have a place for everything and everything in its place, and allow no other thing to be in that place; but that would not suit the purpose of the generality of our readers, who wish for great variety even in their small houses. I can well believe them, therefore, when they tell me, that when visiting gardens they pick up more useful hints from small well-kept ones than they generally do from princely establishments. Not but things may be managed as economically in the latter as the former, or even more so; but there is not, in general, the same conflict going on with little difficulties and the want of room, and, therefore, the same amount of sympathetic interest is not felt. A gentleman once summed up the qualifications he wanted in a gardener by saying, "In a word he must have given up, or be willing to discard, the word 'impossible.' I hear it so often that I am heartily sick of it. I should even be satisfied with 'I'll try,' but the prophets of impossibility have such a knack in proving their prophecies correct and true, that I will have none of them." I trust these fine Roses in pots will have as many admirers in the coming season as they have had in years past; but we must also see the little lean-to houses from which they come, would we be learners in the "impossible" philosophy. After all it is only the exemplification of the old proverb, "A good workman never stands still for the want of a tool;" in other words, men of great practical intelligence, instead of being controlled by circumstances, make even these circumstances, however awkward and obstinate, bend in subservience to their will.

On my last day visit to this nursery years ago, there was a fine collection of bedding plants, which was not such a common affair at that time as it is now. This is still made a prominent feature, though, perhaps, not to the same extent. Some small houses were filled with Calceolarias with names unknown to me. Verbenas in small pots just potted off, and which I should have liked to have had the pleasure of topping several times before May; and lots of fine little plants in small pots of Scarlet Geraniums, which would get large 60's or small 48's as soon as room could be made. Amongst other things I noticed some fine large store-pots of Petunias needing potting, and more particularly the Shrubland Rose—in my opinion as yet unsurpassed by any so-called improvements upon it. A number of our readers are slow to understand that a plant at 6d. or 1s. may be much cheaper than one at 3d. The Geraniums, &c., after such potting and attention must be fine plants before May; but I presume it will be of little use going or sending to Hertford for any, as one of the men told me that their bedding stuff was soon all cleared out, and that they could easily sell ten times as much if they had it.

A few years ago I drove through Hertford and the suburbs on a fine autumn day, and could not help noticing the pretty effect produced by bedding plants, alike on the lawn of the villa and the garden of the cottage. Some cottage homes were rendered very picturesque by having even the roofs covered with Vines, or with a great variety of the Vegetable Marrow and Gourd family, used young as a vegetable, and when full grown for pies and puddings: and then how gay the windows and the borders

looked with flowers! Instinctively we feel in such circumstances that there is a kinship in the love of the beautiful. Many of these industrious residents of the cottage homes of old England, raised above poverty on the one hand, and having no desire to enter the costly regions of an assumed unsatisfactory gentility on the other, would freely purchase for the gratification of the eye a few dozen of showy plants, could they get them in their own neighbourhood free from all uncertainty as to carriage and package charges, and, what is more important, the plants fresh and uninjured from such packing and journey. If what is now grown does pay—and we presume it does, or the practice would not have been continued so many years—and if the supply falls so short of the demand, I trust that our friend will increase his means and room for ministering to this gratification, so that his neighbours may have flower-beds in their little gardens, or at least, flower-boxes in their windows, as well as China and Tea Roses against the walls of their houses.

It is not alone at Hertford, in this district, that the demand exceeds the supply. However, no man is to be blamed for loving that bridge the best that enables him with most comfort and safety to cross the stream. The open-air nursery has long been the principal thing with Mr. Francis. There is more variety than at Sawbridgeworth, but there is something in common as respects the division-of-labour principle; but whilst Sawbridgeworth may be described as a manufactory of fruit trees and Roses, Hertford Nurseries may be chiefly considered a manufactory of Roses and fruit trees.

Fortunately a great many Roses, and trees, and shrubs had been sold in the autumn, and the very moving would save them greatly from the frost. The severe Christmas weather, however had left its traces everywhere. The home ground lying low and close to a sluggish stream, I was surprised to find Peaches and Apricots comparatively little injured. A fine plot of Aucuba japonica was perfectly black, and the wood seemed killed to its base. Alaternuses, Phillyreas, and even evergreen Oaks were greatly injured, and most of them rendered unsaleable for the season. Cupressus funebris seemed killed outright, C. Lambertiana ditto, and many others more or less injured. A fine quarter of common Laurels seemed killed to the bottom. Mr. Francis sent out a great many the preceding year, fortunately; and these, from what I have seen of them, are all right, partly owing to the moving. Araucarias in many cases had their points burned red and drooping, whilst others were green; showing that in similar circumstances different trees of the same kind have different degrees of hardiness, either from the seeds being brought from different positions as to heat and cold, or from other causes as yet unexplained; and what grieved me more, perhaps, was a quarter of nice plants of Pinus insignis, either killed outright, or so injured as to spoil the sale for a year or two.

Though a great many standard Roses had stood the test, yet many of those budded last season had the bud destroyed; and great quantities of the tenderest were either killed or so injured as to be unfit to be sent out this season. The Teas and tender Roses budded low on the Manetti stock were much injured, as far as could be judged on the 8th of February; but Bourbons, Perpetuals, and Hybrids seemed comparatively safe and sound, partly owing to being budded so low, and also to a light skiff of snow on the ground. Had such a frost been expected, and a little earth put round the buds, most likely even the tenderest Teas would have escaped uninjured.

The distinctive feature of the place, however, is the prominence given to the Manetti stock, which Mr. Francis seems to have so thoroughly mastered, that, though many complaints have come in my way of Roses on this stock, I am not aware of a single complaint even from every variety of soil in the case of Roses supplied by him. He candidly states that it will never do for standards, as the stock will ultimately get so hard as to starve or throw out the bud; neither has he any faith in grafting on that stock for similar and other reasons; nor yet does he consider budding on dwarf stocks of any use, unless the bud is inserted close to the ground, so as to be partly covered or wholly covered when transplanted. Then the shoots of the favourite Rose will grow with a vigour unknown when placed on any other stock, or any Roses on their own roots. A regular systematic course is followed from the making of the cutting to its being budded and after-treatment. In a house combining the properties of a greenhouse and working-shed, nice and comfortable from a flue, a number of men before breakfast were dressing the cuttings of the previous year, removing all the roots and shoots up their stems, leaving only the lower ring of roots at the

bottom, and some buds at the top, to sustain free growth; and after breakfast these nice cleaned plants would be planted again in rows, and be budded as soon as the buds were ripe. Some fifty thousand of these cuttings were planted last season, and all would go through this treatment. I saw men going away after breakfast, carrying great bundles of fresh cuttings all of one length—about a foot, as near as I could guess from a distance—as part of the eighty thousand, or one hundred thousand that were intended to be planted this season. The foreman, who has been in the place something like a lifetime, might well say that though fifty thousand even was soon said, it was no joke to get even that number through one's hands. There are other minutiae on which, no doubt, some of the success of the system depends. To a benevolent man there is no slight recommendation in the fact, that in carrying it out the workmen need hardly ever in the cold months of the year have a wet coat, or be frosted out when food and fuel are most needed. A great part of the work in dressing the rooted cuttings and making fresh ones is done in inclement weather in winter, and favourable time selected for planting them.

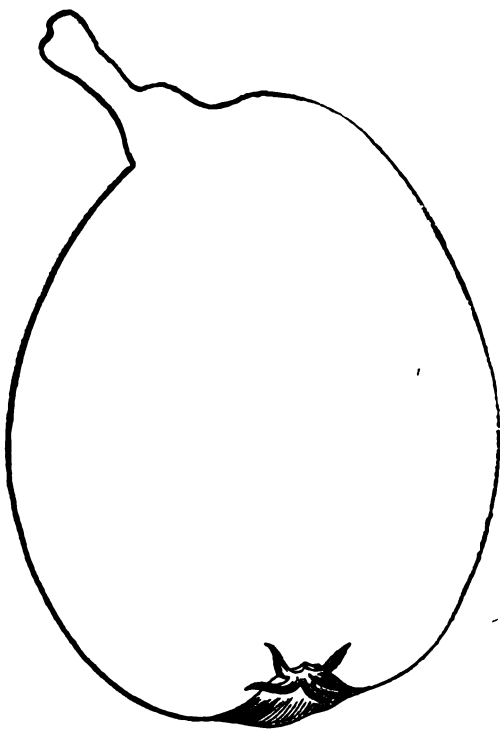
The shrubs, as a whole, escaped the frost well, with the exception of those indicated; and the fruit trees, standards and dwarfs, were young and healthy. On the whole, the two hours spent only whetted my desire, if possible, to have a peep at these nurseries when all was a-growing and a-blowing.—R. FISH.

BRITISH FRUITS & POMOLOGICAL GLEANINGS.

BEURRÉ LEFÈVRE.

SYNONYME—*Beurré de Mortefontaine*.

THIS is not at all a new Pear, for it has been in cultivation for several years; but it is one of which very little is known, although it is to be found in almost all respectable nurseries. When we consider the immense number of varieties of Pears that are now cultivated, it is not to be wondered at that some which are of first-rate quality should escape notice in large collections, until, by some fortunate circumstance, attention is called to them. Such is the case with *Beurré Lefèvre*, of which I first took especial notice in 1859. In that year I found it to be one of the most delicious and refreshing-juiced Pears—not with melting or buttery flesh, but with that crisp, tender, water-ice consistency, which, though of a different character from the other, is in its way equally estimable.



The fruit is inodorous, large, and somewhat oval.

Skin greenish-yellow on the shaded side, and very much covered with a crust of brown-olive russet. On the side next the sun the whole surface has a brownish-orange tinge showing through the thin russet coating, very much covered with large grey specks; in some parts there are broken streaks of red.

Eye very large and open, with long, spreading leaf-like segments, set in a pretty deep, uneven basin.

Stalk an inch long, fleshy at the base, and obliquely set on the surface of the fruit.

Flesh white, rather coarse-grained, half-melting, crisp, short, and very juicy; rather gritty at the core.

Juice very sweet and richly flavoured; with a strong and peculiar aroma, which is very agreeable.

A delicious Pear, ripe in the middle of October. It was raised by Messrs. Lefèvre, nurserymen, of Mortefontaine, near Paris, from whom I received it eighteen years ago.—H.

PEACHES ON A WALL AT CHRISTMAS, December, 18th, 1860.—

On going into my neighbour's garden to-day I saw what was to me a rare sight—a Peach tree trained to his wall covered with fine fruit of a rich golden yellow, with their sunny sides of a deep crimson, and its leaves perfectly green. Some garden-lights were placed against the wall; they had been there only a week. The fruit were soft and ripe, but perfectly flavourless. The variety is American, and called *Poole's Late Yellow*. In 1858 its fruit ripened in the middle of November, and were then of excellent flavour. The peculiarity of this late Peach, and also of the *Salway*, is its retaining its leaves fresh and green long after other kinds of Peaches have shed theirs, and thus bringing to maturity its late crop of fruit.—T. R.

THE EARLY MIRABELLE PLUM.—This very pretty little Plum is nearly as early as the *Jaune Hâtive*, ripening about the third week in July. It is round, of a bright golden yellow, spotted with red; parts freely from its very small stone, and is rich, sugary, and excellent. It is more dwarf and slender in its habit than the *Mirabelle Petite*, and will, doubtless, form a very pretty bush for the orchard-house, in which it would probably ripen in July, though the berries were not larger than peas.

INGRAM'S NEW GRAPE.—During a call we recently made at the nursery of Mr. Standish, of Bagshot, we saw a Vine-pit planted entirely with this new variety, where it is now being forced; and we were pleased to see that it gives great promise of being not only a very prolific and early sort, but that some of the bunches are already upwards of a foot in length and well shouldered.

ENGLISH RAISINS.—Some time towards the end of last September I received some Grapes packed in bran from a correspondent, who wished me to give him their names. There were two bunches—one of the *White Frontignan*, the other *Royal Muscadine*. A few Grapes were taken from each bunch to ascertain their names; the rest were replaced in the box and covered with the bran, which had apparently been sifted, as it was very coarse and free from particles of meal. The box was closed, and placed on a shelf in my library near the chimney. A good fire was kept in the room all the autumn and winter up to the present time, the box quite forgotten. To-day (March 28th), it was by chance opened, and the Grapes found to be perfectly sound, but like *green* Raisins and most delicious; the *Frontignan* flavour quite apparent in one sort, and the *Muscadine* flavour in the other. This is really a pleasant discovery; for how agreeable it will be to have our Grapes, or rather these home-grown Raisins, at Christmas without the trouble of preserving them on the Vines, which, as we all know, requires much care and attention. It seems to me, that in a good Grape season, when Grapes on our walls are plentiful, we have nothing to do but to dry a quantity of bran, sift it thoroughly, and then place our Grapes in it in closed boxes, placing them in a dry warm cupboard or on a shelf near the chimney. Grapes from our vineries may, of course, be preserved in the same manner; but such large juicy sorts as the *Black Hamburg*, will, probably, require looking to if the experiment is tried with them. At any rate, the experiment is simple and inexpensive. In proposing bunches of Grapes to be preserved in bran, it occurs to me that the berries should be thinned, so as not to touch each other; the bran will then enclose each berry, and the gradual drying will preserve them effectually.—R.

A NEW VEGETABLE.—There has lately been exhibited at several meetings of the Royal Horticultural Society a new vegetable which promises to become a permanent institution.

among kitchen-garden crops. It is a Cabbage in the form of Brussels Sprouts. The stem is about a foot high, bearing on its summit a good-size-hearted Cabbage of the ordinary character; but the stem is covered with small Cabbages about the size of a small dessert Apple, and these when cooked form an excellent dish, partaking of the flavour of a nice summer Cabbage, and without the strong Savoy flavour which distinguishes the Brussels Sprouts. The merit of producing this variety is due to Mr. Wm. Melville, Dalmeny Park Gardens, near Edinburgh, and a very good name by which to distinguish it would be to call it *Dalmeny Sprouts*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, the beds should be spring-dressed immediately, if not yet done. *Beans*, earth up the advancing crops when the ground is moist. *Beet*, sow Green and White, for the stalks. *Borecole*, sow the main crop. *Broccoli*, sow a small quantity of all the principal sorts. *Brussels Sprouts*, sow for the main crop. *Cabbage*, if any of the autumn-planted ones are running to seed pull them up, and replace them with some from the autumn-sown bed. *Cauliflowers*, get the plants raised under glass hardened off, and pay every attention to those under hand-glasses to get them in as early as possible; for the destruction of the Broccoli will render them most valuable this season. *Celery*, sow seed for the late crops; those pricked out in frames to have plenty of air, to prevent elongation, and to be well supplied with water in fine, dry weather. *Cucumbers*, earth up as they require it. Keep up a brisk heat in the bed, but beware of overheating it. As long as it is necessary to keep strong linings, a temperature-stick should be kept under each hill of plants. *Lettuce*, a few of the earliest may be tied up on a dry day; tie them as near the top as possible, to prevent the wet getting to the heart. *Radishes*, thin out advancing crops, and sow the Turnip-rooted kinds. *Sea-kale*, sow seed. If a new plantation is to be made it should be done without delay. The destruction of weeds and insects is now a matter of importance. All root weeds to be dug up; the Box-edgings to be clipped, if not done in the autumn; and the walks kept clean.

FLOWER GARDEN.

Continue to prune Roses. Roll walks, and fill up blanks in the flower-borders and artificial rockwork. Sow Auriclea, Polyanthus, Ranunculus, and Pansy seed. Pot Carnations and Picotees in their blooming-pots, placing oyster-shells on the surface of the soil to prevent too rapid evaporation. Plant out Hollyhocks: these have a splendid effect when arranged with the tallest behind, and where contrast of colour has been carefully studied. Look over the beds planted with bulbs, and where necessary stir the surface soil, so as to give it a clean, neat, fresh appearance. If any alterations and planting still remain unfinished it should be completed without delay, as planting after this time is apt to suffer very severely in dry weather. Stir the surface soil of the seedling Pansies in beds, and give them a dressing of manure. Turn walks, and fresh coat with gravel. Plant Box-edgings. Sow hardy annuals of all sorts. Prune and tie all evergreen climbers, and roll and mow the lawn.

FRUIT GARDEN.

Disbud Peach and Apricot trees. It is best to go over the trees occasionally, removing a small portion each time.

STOVE.

Attend to the culture of each particular plant, and go on propagating, potting, and shifting. Encourage growth by syringing with clear water all over the leaves and every part of the house, filling it with vapour. Admit air on all favourable opportunities, but close up early to secure solar heat. When the blossoms of *Euphorbia juciniflora* fade, the plant to be cut down, and kept comparatively dry until it breaks; then to be repotted and encouraged to grow. If an increase of stock is required, now is the time to set about it. Young plants of Allamanda, Clerodendrons, Torenias, and many other things, if encouraged with a brisk bottom heat and other favourable circumstances, will form nice-sized specimens in a few months.

GREENHOUSE AND CONSERVATORY.

Look very carefully to the watering at this critical season. Recently-potted plants to be kept close and syringed frequently, so as to maintain a rather humid atmosphere, and

apply water very sparingly until the growth of the plant indicates that it has taken to the fresh soil. Get a portion of the *Epacris* into a gentle heat as soon as they have sufficiently recruited their energies after blooming. Proceed as vigorously as possible with the repotting of such of the hardwooded plants as require it, so as to afford them every chance to make a vigorous growth. See that *Pelargoniums*, *Cinerarias*, and *Calceolarias* are allowed plenty of space, and that they are sufficiently supplied with water, and kept perfectly clear of insects.

FORCING-PIT.

This department will soon be unnecessary, so far as the forcing of flowers is concerned, but it will become useful to give encouragement to some of the free-growing stove plants, which now require plenty of room. Some of the plants may also be removed from the dung-frames to this pit to make room for Balsams, Cockscorns, Amaranths, and such other plants that are intended for the summer and autumn decoration of the greenhouse and conservatory.

PITS AND FRAMES.

Sow German and Ten-week Stocks in a cold frame, or in one that will soon cool down, and some German Asters on a slight heat. Verbenas, Salvias, &c., may still be propagated for the flower-beds and borders. The bedding plants to have all the air that can be safely given to gradually harden them off for turning out.

W. KEANE.

DOINGS OF THE LAST WEEK.

THE work was chiefly of a routine character—digging, trenching, and pulverising the soil—when the weather would permit. Planted out more Ash-leaved and round Early Frame Potatoes. Finished planting out Peas and Broad Beans from boxes, protecting both with a few twigs of laurels, and staking the former as the work proceeded to prevent the ground being trampled on. Sowed various *Lettuce* seeds, as Carter's Giant Cos, Paris Cos, Blackseeded Brown Cos, and Neapolitan, and Hardy Hammer-smith Cabbage, only a few seeds of each, as the great secret of a thorough good supply is the sowing often. Sowed also Cauliflower, and for the main first crop of winter Greens, as Scotch Cabbaging Kale, Brussels Sprouts, Savoys, Broccoli, of which, with the exception of Snow's Early White, we grow little, the crops being so uncertain of late; Cottagers' Kale, Melville's Garnishing, which we suspect to be much the same as Variegated Kale, which either in its white or red appearance looks well on the table; also, a few Coleworts for early supply. These are sown quite early enough; but a second sowing will be made in a few weeks. Some calendars seem written more for the south of France than England as a whole. Pricked out Cabbages, Cauliflower, and Lettuces in an earth-pit, that were sown broadcast in a Potato-bed, to be protected with a few branches. Watered Potatoes in pots, now fit for use; also, Potatoes in beds, and Kidney Beans in pits, giving the latter manure water to prevent them exhausting themselves in bearing. Sowed more in boxes for transplanting. Watered *Cucumbers* also with warm water. The small plants in the frame heated by leaves and dung, though a fortnight behind those in the hot-water pit when planted, are now at least a week before them, if not a fortnight; fruit swelling and setting nicely. Both are healthy and luxuriant, never having shown a fly, &c., and I hope will not vex us as they did last year; for with every attention I could barely get enough to meet the demand, which I felt all the more, as usually even from a small space we used to have more than abundance. I mention the above fact about the Cucumbers to show that dung and leaves are not to be despised; and then what valuable heaps they become afterwards! I fully believe that a good supply secured, these beds will produce as fine crops as any hot-water apparatus, when growing is not commenced extra early. When Melons are grown in pots, we prefer hot water, and the plants to be on a trellis—the best place of all for first-rate fruit as to quality.

Nailed, when the weather was fine, and finishing pruning. Watered Vines in houses, also Peaches ditto. Made up a bed for three-light box, of the litter that came from Celery-beds and a few hot leaves, now in nice condition, for Melons. Potted off a few young Vines from buds just beginning to root, placing them singly in small pots. Prefer placing each bud with an inch of wood on each side in a small pot at once, but had no small pots to spare at the time. Planted out three lights more Cucumbers, two strong plants to a light.

Sowed more *Tender* and *Half-hardy Annuals*, and, among the latter, Ten-week Stocks, Zinnias, and China and German Asters, placing them in a mild heat. They are quite early enough, but they must stand a little rough treatment after they are fairly up. The 1st of April is generally a very fair time for sowing, if planting out does not take place until the 20th or the end of May. Zinnias being scarcely safe until the beginning of June, and before planting out, all should be pricked out from the seed-pan, and have nice roots before moving. In sowing, we fill either pots or boxes half full with rough material, generally riddings from beneath the potting-bench, then 2 inches of sandy loam, and then a little fine sandy loam, on which the seeds are sown, and some finer still with a little peat earth and silver sand for covering. The covering depends on the size of the seeds. For large seeds, such as the finer Lupins, from one-eighth to one-quarter of an inch. For such seeds as Cockscombs and the *Perilla nankinensis*, about one-twentieth of an inch. For such very small seeds as *Calceolaria*, *Lobelia speciosa*, and *Portulacas*, the slightest sprinkling, and that generally of dry silver sand. For all small seeds the surface is first made smooth with a board, and the same smoothing is resorted to after the slight covering. Our rule is never to cover deeper than the thickness of the seeds. Deep covering gives many an honest seedman a bad name. Another matter of importance is, for all such seeds placed in pots, &c., especially small seeds, to keep them shaded before the seedlings begin to appear. Those we sowed the other week and so treated are beginning to show, such as *Brachycome*, *Perilla*, &c., and these must have light and comparative coolness ere long to keep them from damping. The shading is accomplished by an old newspaper, or anything of that kind being placed over the pots. We generally leave them about a week under the paper before watering, as the seeds imbibe moisture from the soil; and then when watering, instead of using a rose of any kind, I prefer flooding all the surface with water, by pouring the water against the sides of the pot, in a crock, or oyster-shell held in the hand. I do not give any theory, but I know in practice, that a pot thick with tiny seedlings will neither damp nor shank when so flooded, or sailed, all over in anything the same proportion as they will do when watered from a rose, however fine. The great remedies, however, against loss from these causes, is pricking out either singly or in patches, and giving more air.

Continued planting out *Calceolarias* in earth-pits covered by calico, and commenced doing so with *Scarlet Geraniums*, merely forking the bed which seems rather wet, and making little trenches for the plants 6 inches apart, and placing sandy leaf mould immediately round the roots. These at planting time generally lift well. *Pelargoniums*, *Camellias*, *Azaleas*, &c., wanted more water, owing to a few sunny days. After a few dull days the sun, when powerful, tries the soft succulent leaves of *Cinerarias* and things of that kind; and when not dry, anything like flagging will be guarded against best by syringing the shelves and stages, keeping the plants on damp moss and even sprinkling the underside of the leaves.—R. F.

TO ADVERTISERS.

We have to apologise to many of our friends whose advertisements are unavoidably excluded from this day's publication. We request that those who are desirous of taking advantage of the publicity which our pages afford, will send their advertisements as early in the week as possible, that the necessary arrangements may be made for their insertion.

TO CORRESPONDENTS.

* We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c."* 162, Fleet Street, London, E.C.

NAMES OF BRITISH WILD FLOWERS (S. Decon).—No. 1, *Luzula campestris*, or Field Wood-Rush. No. 2, *Mercurialis perennis*, or Dog's Mercury, a female plant. You will see by an advertisement that we purpose publishing on the 1st of May the first Number of the cheapest Illustrated work on British Wild Flowers ever offered to the public. We can safely say that the drawings are faithful portraits and beautifully coloured. We shall be particularly obliged by any one sending us good fresh specimens of rare British plants.

BREEDING CINERARIA (J. Loease).—A good, stout-petaled flower, but there are many like it. It would not pay to send out.

RISE IN HOT-WATER PIPES (A Very Old Subscriber).—It will be no detriment whatever the rise of 18 inches in a length of 60 feet of the flow-pipe, and the same amount of fall in the return-pipe. Of course you will have the flow-pipe proceed from near the top of the boiler, and the return-pipe join it near the bottom. One four-inch pipe at the back and one at the front will be ample for early forcing of Cucumbers.

FORKING BORDERS (A Lady).—This is far better than digging them with a spade, as it injures less the roots of shrubs. Indeed, the fork has nearly superseded that old emblem of the gardener's occupation—the spade. A four-pronged fork for stiff soils, and a five-pronged fork for sandy soils, work them quite as thoroughly as the spade, and with the expenditure of much less strength from the workman.

QUERIES (Nottinghamensis).—It would occupy space uselessly to put in queries which are sufficiently indicated by the answers, or such queries as are only interesting to the inquirer. All others we do insert.

PLANTING A CIRCULAR ROSEY (M. M. P.).—We cannot relax from our rule, so many times repeated by us—we cannot plant strange plants for any one. Our correspondents must tell us how they intend to plant, naming the plants, and specifying the spots on a plan where they propose to put them—we are then willing and ready to point out where the plan is wrong.

GROWING ACHIMENES (The Doctor).—Pans are better than erinoline-pots to grow *Achimenes* in when one has abundance of plants of them; and for a very small quantity of any scarce kind No. 48-pots are the best to start them in, then to give them a shift if they need it.

NAME OF HYACINTH (Peeckham Subscriber).—It is almost impossible to tell from a single pip, but it is probably *Comte de la Coste* or *Regina Victoria*.

PHILEAS BUXIFOLIA—LILUM GIGANTEUM (An Old Subscriber).—The *Phileas* ought to be hardy at Colchester; but it is a good pot plant, and might be with the Chinese *Azaleas* till it blooms or is of a flowering age. It requires peat in the soil and much moisture. The effects on the gigantic Lily do it no harm, and are no indications of its going to flower. The first notice of flowering is an upheaving in the centre, like that of the scarlet *Lobelia* or *Campanula pyramidalis*, and will go on exactly in that manner. Some of ours have such an appearance already in the centre of the pots.

CYCLAMENS IN BOXES (H. B.).—Different varieties of *Cyclamen persicum* were meant only for one box, and if Mr. Beaton advised otherwise he made a mistake.

DWARF IVY BUSHES (C. P.).—You were quite explicit at first; we only imagined no one was so extravagant in these things as we have been, for we have been wishing for many years to possess an Ivy bush—upright as white currant bushes, and nearly of the same shape and size; and it is a comfort to know at last that the idea is not unique. We have struck cuttings of the arborescent Ivy, or the flowering shoots, which are the same thing, and we had them with their entire leaves on for half a dozen years; but they never got bigger all the while, and the first growth they made, away they went with shoots longer than ever and with lobed leaves. But now that you have struck the flint at the proper moment, there is a way of doing it, and of having quite a forest of round-headed Ivy trees, with trunks and branches, entire leaves, flowers for the bees, of which they are passionately fond late in the autumn, and berries for all the Thrush tribe in winter. Let the Ivy trees be as one row of Mr. Rivers' miniature-orchard, and let the whole row be lifted and transplanted every other year; and if that row does not produce twice as much fruit as holly trees, let it be oftener transplanted till it does. Now is just the time to begin making Ivy trees. Procure some stout flowering branches from a ruin, or from near the bottom of the Ivy half strangling a tree, fix on a part of the branch as near the bottom as you can, to give you the more length of trunk after it is rooted; then to cause it to root cut off a ring of two inches in width of the bark, all but about the width of the fourth of an inch, and leave that narrow slip of bark to carry on the circulation; then get some sheets of gutta percha, paper, or parchment, and form each of them into the shape in which grocers make their soft sugar parcels—the pointed end tie tightly a little below the ringed part, and let the open part of your paper be 9 inches or 10 inches wide, and deep enough to hold as much good, rich, sandy loam as would fill a No. 21-pot, pack the soil tightly round the ringed part, but not very tight above it, water it well, and keep it well watered till next October, when it will be as full of roots as possible; and then cut it off from the old tree, and plant it carefully in a sheltered place, and see it is well staked. A layer of moss on the top of the soil in the gutta percha paper, and a little of the moss all round the wound in the bark will hasten the process of rooting. If the stem of Ivy is as thick as some we know, one would need half a bushel of mould and two years to root it properly.

PROPAGATING VARIEGATED ARABIS (Idem).—The variegated *Arabis* partakes of a wide-spread principle among plants just coming into bloom, as it naturally does early in the spring. Plants under that principle do not readily root from cuttings freely on the eve of blooming, so that it is necessary to excite them to grow out of "flowering wood" ere the cuttings are made. In May it roots out of doors under a hand-glass freely, and so on till September. The old plants may be slipped to pieces in October, and every bit with or without a root grows. In January it should have three weeks' forcing before cuttings are made of it. But it deserves all the care and attention of the whole gardening strength of the British Islands. If it stands the influence of the sea breeze under exposure, this is the best variegated plant for the whole of the Hebridean archipelago.

CUTTING BACK WEIGELIA ROSEA (R.).—Let it bloom, and cut it back afterwards; unless you are willing to cut it now, and sacrifice the flowers for this season, in order to get a more bushy plant well furnished from the bottom, and of a superior shape. This would be preferable.

PRUNING STANDARD ROSES (Idem).—All the very strong Roses are the better to be pruned thus late in the season, because, ere this time, their upper shoots are bouncing away in full growth. By cutting off the upper half now, and a little more from the smaller shoots, so much of their pride, or over-strength, is got rid of, and the steady, sober, and self-ripened eyes below will come with less speed and more bloom, and make better wood for next pruning. It is now too late in the spring to remove Standard Roses, but of course they can be removed with a sacrifice until the end of April.

VINES REFUSING TO BREAK.

I HAVE in my late house of Vines three Vines that I cannot get to break, except at the bottom of each stem. When I entered on my present situation in July they had been under the care of a labourer, and had been scoured, and bore little fruit. When the pruning season arrived, which was on the spurting system, I cleaned all the old bark off, and washed them in a mixture of soft soap, sulphur, and cowdung—a mixture always used at Trentham for all the fruit trees. My early house, which I have treated the same, has a noble crop of fruit on. I may also add that the roots are outside, and have been covered with horse-litter to the depth of 14 inches all the winter. When I took the litter off, about the middle of the month, I found the border wet, but the roots are good.—H. H., *Lancashire*.

[If the tops of your Vines will not break now we should judge that they must be dead, and we should judge that they have been killed by exposing them to frost after peeling their bark off, or that in washing them you used the paint in too warm a state. You give us too few data from which to judge; but as they are breaking from the bottom, either cause would produce the result. Are there no marks of mice or rats gnawing the stems above the place whence the young shoots are now coming? If the upper portions of the rods are dead, you cannot do better than replace them by some of the young shoots from their base.]

A GLIMPSE OF WOODHALL.

(Concluded from page 79.)

THE kitchen garden is large and beautifully situated, well sheltered, and the walls extra well supplied with fine fruitful trees. Beyond the walls shrubs and trees had suffered rather more than in this exposed place; but inside there was a great difference. Apricots seemed scarcely touched, and well stored with prominent fruit-buds, whilst ours had shrivelled up or dropped, though the wood-buds remained. Peaches, too, on a wall were a picture, for its fine trees seemed little injured; and though on cutting some shoots the heart was rather brown, Mr. Beale thought they would manage to grow and bear their crop. A Pear-wall, the shoots trained horizontally, some years before had the spurs thinned and gradually removed, and young wood tied downwards over the main branches, and these were bristling with flower-buds, though Pear-blossom is extra thin in many places this season.

I noticed an underground spacious chamber for all root crops where there is no danger of frost entering. A commodious stair leads to the entrance, but light is obtained and the roots put in through a trap-door on the ground level. Potatoes, Carrots, Beets, &c., were in excellent condition. Mr. Beale praised very highly the Pine Apple Beet for its rich colour and extra saccharine properties. The Mushroom-house was on the old principle of Oldacre, with wooden shelves, and the lower beds next the ground were seldom used, as the shelf-beds were more thoroughly under command, and plenty were obtained from them by successions. Some bushels might have been gathered that day. I noticed no peculiarity except that the surface of the beds was rather loose, but Mr. Beale stated they were not so firm as he generally had them.

The whole forcing department was next to perfection. A long pit of young Pines heated entirely by fermenting material within, such as tan, and dung linings without, looked very well, having been carried through the very severe weather without suffering in the least. The plants inside were all nice and dry, not wrapped in moisture and cold vapour, as they frequently are in pits heated by dung at that season. This was much owing to the closeness of the brick walls. They had originally been pigeon-holed, but Mr. Beale had the holes filled up, and now with the dung banked up to the top of the walls, the enclosed atmosphere was dried as well as heated, and air could be given more freely in favourable weather. The fact bore out what has several times been stated about heating by dung.

A little above this is a long range of span-roofed houses or pits in three divisions, but which can be all heated at once, or one or two only, beginning with the end next the boiler. If not all new it has been remodelled by Mr. Beale. The side walls are from 3 feet to 4 feet, with ventilators in them for side air. In one side the sloping roof each alternate light is made to slide; and as the lights are heavy, a stout iron pin with a chain attached

goes through them into the wall-plate to keep them secure when close or open. A few inches at top are found sufficient for all early crops. The height to the ridge is 8 feet, width of house about 11 feet. A pathway down the middle divides it into two beds. There are two pipes on each side for top heat, one next the outside wall, and one above the wall of the path, both on the same level; and one running back under the bed, with a little fermenting material, gives enough of bottom heat for cucumbers, melons, &c. A peculiarity is a stout wooden shelf immediately above the pipes next the passage, and which in such a position, independently of the non-conducting properties of wood, becomes nicely warm and furnishes a good platform for a few ornamental plants. On the 8th of February the boards were mostly filled with cutting-pots of Verbenas, &c., doing nicely. Cucumbers were put out in some of the beds, and there were some fine Orange plants coming into bloom for the conservatory.

Higher up still on the sloping ground were a range of Pine-houses. These had originally been very wide pits, covered with huge sashes some 16 feet or more in length—a fine benefit to move up and down for air, and to take off when anything required to be done! The sashes are retained, but the back wall has been removed, except what was wanted for a curb for the Pine-pit, and the house has been widened so as to permit of a wide pathway behind, covered with a short-hipped glass roof, by which air is easily given. The middle division has been converted into a stove for plants, with massive slate platforms, as more Pines were grown than were wanted. The Pine plants were strong and stubby; some swelling, some showing, and many presenting that look that tells the gardener that they would yield their fruit in regular succession. The smooth Cayenne seemed a great favourite, and the plants were very fine. I find several gardeners are becoming greatly in love with this kind. A good judge told me lately that the fruit had an aroma of its own. It is certainly more pleasant to work among than the hard prickly gentry.

On the brow of the slope stands a splendid range of vineries, some 16 feet or 18 feet wide, and lofty in proportion, the roof coming low down in front. These houses are heavy, with immense sashes in the old-fashioned way; but the Vines were pictures. The later vineries had the floors covered with bedding plants. One house or more was filled with Scarlet Geraniums in small pots, soon to have a shift into a larger. Each pot had a large-cutting put into it in autumn—a good plan where such room can be afforded. When Mr. Beale has the new flower garden in full working order, most likely he will have to economise room, too, in winter.

The early vinery was a fine sight. The bunches were within a few days of flowering on the 8th of February. The Vines had been spur-pruned, and I did not notice a shoot without its bunch. The crop, therefore, would not only be fine, but regular and equal, and the Vines were in the best possible condition. As far as I recollect, the Vines are planted inside, but the roots go out into a wide border, with a fine slope to the south. How then was the border treated? Much in the way recommended by Mr. Bailey in a late volume. Early in autumn some rich dung is placed on the border, that the virtue may be washed in by the late summer and autumn rains. Early in autumn—at least before the ground loses heat by radiation—a good layer of fern is thrown over the border. Later some long litter is added, and hurdles thatched with straw are placed next the front wall of the house, and in front of them the border is rough-thatched, so that much of the rains of winter is thrown off. The mode of covering will not throw much heat into the soil, but it prevents the heat accumulated in the summer escaping at all freely, so that the roots will be in a comfortable position, and ready to meet the demands of the expanding leaves and swelling bunches. One peculiarity of Mr. Beale's system, and one worthy of being noted, is—in his early house he never moves the covering until the Grapes are coloured, if not mostly cut. Then the border gets its fresh dressing, as alluded to above.

Another peculiarity (or nearly so, for I noted the same thing in a short description of the Poles, the residence of Robert Hanbury, Esq.), is—that the heating-pipes are on the same level. In these vineries there are five four-inch pipes somewhat regularly distributed over the width of the floor from the pathway to the outside front wall. That is the number in this fine early vinery at any rate. Four of these pipes are flows, and one is a return. So far as the hand could judge, all were as near the same temperature as possible. When less heat is wanted

"If the egg has been chipped for some hours, and the chick does not make its appearance, a slight assistance may be given by enlarging the fracture with scissors, cutting up towards the large end of the egg—never down, or the loss of blood may prove fatal. When the chicken at last makes its way out, do not interfere with it, or attempt to feed it. Animal heat alone can restore it. If it survives the night, it may be considered safe. Weakness has caused the delay, and this has, probably, arisen from insufficient warmth."

The balance-sheet shows a profit of £24 7s. in the twelve months between February, 1860, and February, 1861; but we do not observe any allowance made for the cost of exhibiting. Does Mrs. Blair find that the prizes gained cover that cost? If not, the loss should be on the debit side; for if she had not acquired a name by exhibiting, she would not have sold poultry by auction for £148 15s. 6d., a sum appearing on the credit side.

The woodcuts are excellent, and the drawing of the coloured illustrations is for the most part good, except of that terrible exaggeration the Cochín-China hen; but let no one accept the colouring as correct.

CANARIES' FEET DISEASED.

MY Canaries have been affected in the course of February and this month with an epidemic inflammation in the feet and legs. Can you or any of your correspondents give me any information on the following points? 1, Whether the disease is known? 2, If known, what has been found to be the most safe and effectual treatment? 3, If not known, what is the probable cause in this instance? 4, What would probably be the best treatment?

The symptoms are at the commencement restlessness, and ruffling, sitting on one leg, &c., reddening of the whole limb, and swelling, but chiefly at the joints, soon perceptibly follows; and then the usual moping till amendment begins. Hitherto, no bird has died, but one or two are now sickening, and the cases seem likely to be severe. The food of the birds has been canary, rape, and a small proportion of hempseed, with groundsel till the affection began. After that, egg instead of groundsel, and a little saffron in the water. The birds were accustomed to take their bath in their cage, and it was thought that a chill was given by the damp sand adhering to their feet. Since the first appearance of the disease they have taken their bath outside their cage, as they have a daily flight about the room; but still the birds sicken.—R. S. V.

P.S.—I noticed a very large wasp here on the 5th inst. (March). Is not this unusually early?—R. S. V.

[I only know of two causes of diseased feet—one arises from dirt, and may be cured by the bath and cleanliness; and the other is caused by wool or the fine threads of silk or such substances becoming entangled about their feet and cutting down to the bone, where they are not easily seen or removed. These threads must be picked out, and the feet anointed with oil, and they will soon heal.—B. P. B.]

BEEES NOT WORKING—BEEES PLUNDERING THEIR NEIGHBOURS.

AN *Old Subscriber* is very anxious about a hive of bees in a straw hive. It is strong, full of bees, and well fed since September. All the winter it was kept with another hive on a wooden bee-stand, exposed to the east, but not sheltered in front. Both hives were working well but began to fight, and the straw hive was moved a few feet from the stand containing the other hive, and since the hive was moved the bees have not come out to work. They are alive but seem lazy. Could the queen have died? Do bees generally become quarrelsome when together?

[Endeavour to rouse your sluggish bees into activity by giving food on fine days. Use the bottle as recommended by Mr. Woodbury, in page 42 of our last volume, if there is an aperture in the top of the hive. Should there be no aperture, or the bees refuse to appropriate the proffered food, inject a little with a syringe into the hive itself, through a hole formed by thrusting the pointed end of a thick wire between the straw bands near the top. If this fails to set the bees to work, and little or no pollen is collected, we should fear the queen is dead, a misfortune for which we know of no remedy at this season. A bee-house

9 feet long would contain three colonies without much danger from their close proximity; but all should be ranged on one shelf. Bees are less apt to quarrel when the stocks are at a distance from each other, but want of space generally prevents their being widely separated. The strong are always apt to prey upon the weak in an unpropitious season like the present. The entrance of the hive that was attacked should have been contracted as soon as fighting commenced, so as to admit the passage of only one bee at a time; and if this failed to put an end to the conflict, the bees should have been removed to a distance of not less than a mile and a half. As soon as fine weather had set both colonies vigorously to work, the transported hive might be restored to its place without risk of a renewal of the disturbance.]

BEE-HIVES AND THEIR APPURTENANCES.

ANY one commencing bee-keeping must be struck at the great contrariety that exists between writers on this subject, both as regards the material and form of hives and their system of management.

After perusing one author, and resolving to adopt the system so strenuously advocated, the novice is sadly perplexed on taking up perhaps the very next work that may chance to fall in his way, to find that system controverted, and its opposite as strongly recommended; and after wading through, it may be, the greater part of the bee literature of our country, is landed in a perfect maze of bewilderment. Arriving at this stage, it must act as a soothing opiate to his perturbed feelings, to open "Miner's American Bee-keeper's Manual," and there find, condemned *in toto*, the whole authors of the old world from the illustrious Huber downwards; the hives of his own fellow countrymen having a scant justice meted out to them, being described with such Yankeeisms as "take ins," "humbugs," &c., and following his reasoning that the bee remains the same through every age and country: consequently "every bee-hive in the United States should be of a certain size and shape," that after many years of close application he has made the grand discovery which is given forth as "Miner's Patent Equilateral-Hive," so far as his readers are favoured with its description being neither more nor less than a twelve-inch-cube box. Our author is much "too cute" to give further details—these are only to be had on remitting him a couple of dollars. One almost fancies the delighted novice about to transmit the requisite sum to obtain this *ne plus ultra*, when in comes No. 611 of your valuable Journal. A glance at the contents shows the very thing he longs for—an article on "Bee-domiciles," the writer of which without even once mentioning the great equilateral principle, after describing the hives of his own apiary, wishes to disabuse the apiarian mind, of what?—the fallacy that one hive can be superior to another! or to quote literally his own words, "That by no particular invention, contrivance, or theory, bees can be forced, as it were, to augment their sweets." This reasoning being subsequently complimented in your columns by no less an authority than "AN OLD APIARIAN," it is no wonder though the poor novice should be driven as a last resort, to the purchase of some of those pretty expensive toys disposed of by parties as bee-hives, who surely know little of the subject, and into which the practical bee-keeper would never think of hiving a swarm.

That Miner may have found his equilateral-hive of a size suitable to the requirements of average swarms in the United States is possible enough; but it is simply absurd to argue that this size should be adopted in every case, be the swarm great or small. A small swarm hived in a roomy box, must necessarily retain within it a greater number of workers to raise the temperature for comb-building, and, therefore, can spare fewer to go abroad foraging; this must materially affect their store at the end of the season, and contrast unfavourably with hives of smaller dimensions. As to large swarms, he admits having received communications from parties supplied, inquiring what they are to do with swarms his hives cannot contain. His advice in such cases is that the appearance of swarms at hiving time is fallacious; to place an inch block below each corner of the hive, and at the approach of the first cool weather they will draw within. Indeed, our author seems to consider those monster swarms which occasionally darken our apiaries, not as happy windfalls, but as monsters in the worst sense of the term; and goes on reasoning that swarms should consist of a certain number and no more; that "bees in a hive are exactly in a similar position to a body of mechanics in a workshop; that they must have a certain

account of their size, but they may be too fat; and then, like prize beef at Christmas, while they are admired as showing their capabilities in that way, and while wonder is expressed at the veins of fat intersecting the scanty lean, the fact rather renders them unsaleable than otherwise. It is impossible to fatten a Dorking chicken, if by that term we mean such a one as we have described at the beginning; but a good, large, fleshy, and moderately-fat bird, such as will sell in any market, must come from the Dorking.

It is easy after "Potage à la reine," "Saumon sauce Hollandaise," and so on, to look with loathing on a good, large wing; but if you have been throwing a fly over the Winchester or Andover white water all the day, and sharing the usual fate of the gentleman at table—have the leg at dinner—you will say the Dorking cannot be too large, and you will rejoice you are not in Sussex where the small and delicate chickens prevail.

A friend of ours says the Dorking is a curate's fowl, while the chicken should frequent fat rectories. If a referee be wanted to decide, we recommend the author of "Barchester Towers" to officiate.

The late Sidney Smith said "Barndoor fowls for Dissenters, but for the Thirty-nine-times-articled clerk of the Church of England the Pheasant, the Pheasant, and nothing but the Pheasant." We paraphrase the sentence, and we say, for the man who has an "embarras de plats," the chicken; but for the man who has been with the Cheshire, the Quorn, or Mr. Garth's, or who has flogged the river all day, we say the Dorking, and, in familiar parlance, we say, "The bigger the better."

We will return to this subject.

DORKING CHICKENS AT EXHIBITIONS.

THE opinions given by your correspondent, *One who has not lost sight of a Dorking fowl*, are quite at variance with practice. His words are—"It is very rare you see now-a-days a pen of prize Dorking chickens purchased at large Shows—viz., at Birmingham and the Crystal Palace, where there are great contests for the championship, which, when they arrive at adult age turn out anything like what the purchaser anticipated at the time of purchase."

It must be from a want of knowledge in the management, if you do not see the first-prize pen from either of the above Shows in the prize list wherever exhibited, if in health and not too fat.

Can your correspondent produce any one who has bought a first-prize pen of young Dorkings at either of the above Shows during these last five years, that has been so unfortunate as he would lead purchasers to believe?

I, for one, have at present three first-prize pens of chickens from the Palace, and very seldom show without gaining a prize.

Again, your correspondent says, "I can speak from my own experience. No Dorkings, I am sure, will ever get too fat by running in a farmyard and moderately fed." Now, on the contrary, I have had them get too fat running in the farmyard and not fed at all.

How different our experience! I have also had them become too fat for the judges when running in the centre of a very extensive park, by feeding night and morning only.

My Dorkings are all running in farmyards or woods, and are fed twice a-day, and are in good laying condition, and not put up to fat, yet they weigh from 9 lbs. to 13 lbs. and most of them have taken first or second prizes, either at the Crystal Palace or at the Birmingham Shows.

I should by all means advise intending exhibitors to purchase prize fowls at either of those Shows. If they can show them in good condition they will soon repay themselves. The Dorking is a fowl you can improve until three years old: therefore, if you see a pen of young Dorkings to please you, buy.—JOHN DOUGLAS.

PROFITABLE POULTRY KEEPING.

IN your Number for April 2nd, at page 16, you favoured your readers with some interesting extracts from, and some just but friendly criticisms on, Mrs. Fergusson Blair's work, "The Henwife."

I have long kept hens for the purposes of profit only; and the point to which I would call the attention of your numerous readers is, the very small profit balance for the large number of "more than one thousand chickens annually hatched;" which

profit would be reduced to a certain loss, had the expenses of exhibiting, as you suggest, been placed on the debit side.

The county in which I resided (Shropshire), on my first essay in poultry-keeping, eggs were worth 1s. only per score in the laying season; and fat fowls were considered dear at 4s. the couple, the more usual prices being from 2s. 6d. to 3s. I have purchased fat young Ducks at 2s. 6d. the couple, when, as the local phrase hath it, the vendor had "overstood the market."

But to return to the more immediate subject. As before observed, I had kept hens with profit, even at the prices given above, when I removed into Hertfordshire, and there became acquainted with the system of poultry-keeping on a large scale; and in which the balance is on the right side of the account, to the tune of some—not tens, nor even hundreds, but—thousands of pounds in the aggregate.

This insight decided my course. I commenced at once, though on a very moderate scale; and I will give, with your permission, the results I attained.

My accounts begin but imperfectly; but when fairly at work, a daily journal was kept—not a chicken nor an egg being disposed of without an entry of the price obtained; and when for home consumption, entered at cost price. On the other hand, all grain, meal, bran, and the several et ceteras for poultry feeding, were duly placed on the debit side; and at the year's end, a moderate charge was made for management, rent, and interest, thus putting to the proof whether or not poultry-keeping is profitable.

And I can safely aver it is, and that to a great extent; the fact being established, profit is only a matter of degree. The want of capital alone prevents me turning my knowledge and practice to good account.

I well remember a writer, in one of the early volumes of THE COTTAGE GARDENER, stating that "a hen was as profitable as a sheep." I agree with this assertion. I can give data proving that the nett profit of poultry keeping is —. Well, wait until the next Number, good reader; and then, with the permission of the worthy Editors, you shall know all.—LEIGHTON.

(To be continued.)

APPROACHING POULTRY SHOWS.

TAUNTON AND SOMERSET POULTRY SHOW.—This Society at their next show, offer thirteen pieces of plate and three silver medals, the former value £2 2s. each; and also money prizes between £50 and £60. The highest entry-fee is 4s. The Committee have a good subscription list, and everything promises well for a most successful exhibition. There are Sweepstakes (entries 7s. each) for Single Cocks of Spanish, Dorking, Cochinchina, Malay, Game, Hamburgs, Poland, and Game Bantam. Charles Ballance, Esq., is the Secretary; and we take this opportunity of saying that such secretaryship is always "honorary," except in the case of such extensive Exhibitions as Birmingham and the Crystal Palace.

DRIFFIELD.—This is held in combination with a floral and horticultural exhibition; the prizes vary from 20s. to 5s., and the entry is only 1s. per pen. "Pigeons and Rabbits must be shown in the exhibitor's own cages or boxes."

HEN WITH STRADDLING GAIT.

THANKS for your advice upon the hen with straddling gait, but it came too late. She died yesterday. We saw she was worse, but did not expect her to die, as she pecked about as usual; but she had during the week made a noise like coughing, and the last day lost her voice entirely; she tried to cackle, but there was hardly the least sound; she breathed heavily, and seemed to be more stupid and giddy, if going backwards with head to the ground as if to avoid something before her eyes is a symptom of giddiness. Upon opening her there was fat similar to that of a Goose, and a little on the gizzard, but on every other part she was thin, the breastbone piercing through the skin. There was a number of yolks, and one in the egg-bag which she would have laid the next day; but the heart and lungs were not larger than a Bantam's, and the liver seemed large and dark; a great deal of inflammation was all round the covering of the bowels.

She never seemed to have any difficulty in laying, never remaining very long on the nest. She commenced her ailments two months back, with loss of power in the legs and great

pruning the Vine on walls, whether in or out of doors, is the alternate long-rod system. By this plan a regular supply of good fruit-bearing wood is secured, and, besides that, the method is simplicity itself, and is regular and neat in appearance. In the autumn the Vines will have two shoots to bear fruit, and these should be pruned to nearly the top of the wall. Two others will be cut down to a bud close to the main horizontal stems. These will send up shoots to be trained between the fruit-bearers, whilst the two end shoots should be trained down in the same line as the horizontal ones.

In the third summer the last year's horizontally-trained shoots should have all the buds rubbed off excepting two on each. These two should be 2½ feet apart and trained to the wall should reach the top of it that year. This year's growth will cover the space of wall each Vine should fill—that is, there will be four fruit-bearing upright shoots, and four shoots to bear fruit the

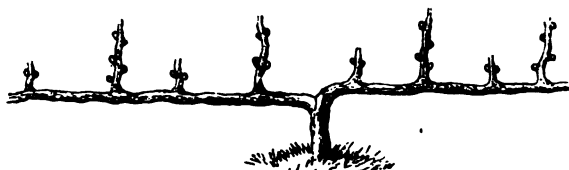


Fig. 5.

following year (fig. 5). In the autumn those that have borne fruit should be cut down, and the others left nearly their whole length to bear fruit.

Should the trees when four or five years old show anything like weak growth, then remove a portion of the surface soil, and add a sufficient quantity of fresh compost to renew and sustain their strength. Occasional waterings with liquid manure will greatly assist their growth, and will help to swell off the fruit. The finest fruit will always be near the top of the wall, but I have had very good bunches and berries about halfway down.

The following are good kinds to grow against a wall in the open air:—Early Black July, Esperione (black), Royal Muscadine (white), White Dutch Sweetwater, Black Hamburg, and Verdelho (green).

T. APPELBY.

(To be continued.)

CRYSTAL PALACE FLOWER SHOW.

THE first Flower Show of the season was held at the Crystal Palace on Saturday last, and although we missed some of the great exhibitors who usually contribute towards the effect of these floral gatherings, there was, nevertheless, a very excellent display. The close proximity of the grand opening at Kensington Gore has caused many of the large exhibitors to keep their plants back for that occasion, and hence the dearth so apparent of those floral mammoths which we were accustomed to see on those occasions.

We must reserve till next week our critical observations on the Exhibition, merely remarking that the Roses in pots of Messrs. Lane, were as usual very fine, as were those also of Mr. William Paul, of Waltham Cross. The Pelargoniums and Cinerarias of Mr. C. Turner, also formed a prominent feature; and among the Fruit, we remarked the fine exhibitions of Mr. Hill, of Keele Hall, of Mr. Henderson, of Trentham, and of Mr. Stewart, of Chatsworth, from the midlands, who seemed to have the best of the great stakes. All we can do at present is simply to append the prize list, leaving our observations till next week.

TWENTY STOVE AND GREENHOUSE PLANTS (in flower).—First and Second, Mr. B. Peed, gardener to T. Tredwell, Esq., St. John's Lodge, Lower Norwood.

TWELVE STOVE AND GREENHOUSE PLANTS (in flower).—First, Mr. John Green, gardener to Sir E. Antrobus, Bart., Lower Cheam. Second, Mr. R. Baxendine, gardener to W. A. Smallpiece, Esq., Millmead House, Guildford. Third, Mr. William Cutbush, Nursery, Barnet.

EIGHT STOVE AND GREENHOUSE PLANTS (in flower).—First, Mr. H. Chilman, gardener to Mrs. Smith, Ashstead House, Ashstead. Second, Mr. Wm. Kaile, gardener to the Right Hon. Earl Lovelace, East Horsley Towers, Ripley. Third, Mr. Thomas Page, gardener to W. Leaf, Esq., Streatham. Fourth, Mr. James Tegg, gardener to Baron Hambro, Southampton. Extra Prize, Mr. Osman Rhodes, Nursery, Sydenham Park.

SIX STOVE AND GREENHOUSE PLANTS (in flower).—First, Mr. Thomas Page, gardener to W. Leaf, Esq., Streatham. Second, Mr. Charles Smith, gardener to Arthur Henderson, Esq., Norwood. Third, Mr. William Kaile, gardener to the Right Hon. Earl Lovelace, Ripley. Fourth, Mr. H. Chilman, gardener to Mrs. Smith, Ashstead. Fourth, Mr. John Green, gardener to Sir E. Antrobus, Bart., Lower Cheam. Extra Prize, Mr. B.

Baxendine, gardener to W. A. Smallpiece, Esq., Millmead House, Guildford.

TWELVE FINE-FOLIAGED AND VARIEGATED PLANTS.—First, Mr. Charles Hutt, gardener to Miss Burdett Coutts, Highgate. Second and Third, Mr. G. Young, gardener to W. H. Stone, Esq., Dulwich Hill. Fourth, Mr. G. H. Bunney, Stratford. Fourth, Mr. J. Smith, gardener to Coles Child, Esq., Bromley.

SIXTEEN ORCHIDS (of Exotic Species, in flower).—First, Mr. Robert Stone, gardener to J. Day, Esq., Tottenham. Second, Mr. B. Peed, gardener to T. Tredwell, Esq., St. John's Lodge, Lower Norwood.

TEN ORCHIDS (of Exotic Species, in flower).—First, Mr. Edward McMoreland, 29, Adelaide Road, Haverstock Hill. Second, Mr. Robert Stone, gardener to J. Day, Esq., Tottenham. Third, Mr. Thomas Page, gardener to W. Leaf, Esq., Park Hill, Streatham. Fourth, Mr. S. Woolley, Cheshunt, Herts.

SIX ORCHIDS (of Exotic Species, in flower).—First, Mr. Charles Penny, gardener to H. H. Gibbs, Esq., St. Dunstan, Regent's Park. Second, Mr. G. H. Bunney, Stratford. Third, Mr. Edward McMoreland, 29, Adelaide Road, Haverstock Hill. Fourth, Mr. Robert Stone, gardener to J. Day, Esq., Tottenham.

TEN GREENHOUSE AZALEAS.—First, Mr. Charles Turner, Royal Nurseries, Slough. Second, Mr. John Green, gardener to Sir Edmund Antrobus, Bart., Lower Norwood. Third, Mr. S. M. Carson, gardener to J. C. Sim, Esq., Nonsuch Park, Cheam. Extra Prize, Mr. Thomas Page, gardener to W. Leaf, Esq., Streatham. Extra Prize, Messrs. James Ivory & Sons, Dorking and Reigate.

SIX GREENHOUSE AZALEAS.—First, Mr. Charles Turner, Royal Nurseries, Slough. Second, Mr. Thomas Page, gardener to W. Leaf, Esq., Streatham. Third, Messrs. James Ivory & Sons, Dorking. Third, Mr. Charles Penny, gardener to H. H. Gibbs, Esq., St. Dunstan, Regent's Park. Fourth, Mr. B. Peed, gardener to T. Tredwell, Esq., Lower Norwood. Extra Prize, Mr. Charles Smith, gardener to Arthur Anderson, Esq., Norwood.

EIGHT GREENHOUSE AZALEAS (New kinds).—First, Messrs. James Ivory & Sons, Dorking. Second, Mr. Charles Turner, Royal Nurseries, Slough. Third, Messrs. James Ivory & Sons, Dorking.

EIGHT CAMELIAS.—Second, Mr. B. Peed, gardener to T. Tredwell, Esq., Lower Norwood. Third, Mr. O. Rhodes, Nursery, Sydenham Park. Fourth, Mr. Thomas Page, gardener to W. Leaf, Esq., Streatham. Fourth, Mr. H. Chilman, gardener to Mrs. Smith, Ashstead.

SIX TALL CACTI (species or varieties of, in flower, large plants).—First, Mr. John Green, gardener to Sir Edmund Antrobus, Bart., Lower Cheam. Second, Mr. Wm. Young, gardener to R. Barclay, Esq., West Hill, Highgate. Third, Mr. A. G. Ashman, gardener to C. W. Major, Esq., Burntwood Grange, Wandsworth Common.

TEN ROSES (in pots, distinct kinds).—First, Messrs. Lane & Son, Great Berkhamstead. Second, Mr. Wm. Paul, Waltham Cross. Third, Messrs. Paul & Son, Cheshunt.

SIX ROSES (in pots not exceeding 8 inches in diameter).—First, Mr. Wm. Paul, Waltham Cross. Second, Mr. Charles Turner, Royal Nursery, Slough. Third, Messrs. Paul & Sons, Cheshunt. Fourth, Messrs. Lane and Sons, Great Berkhamstead. Extra Prize, Mr. Wm. Kaile, gardener to Rt. Hon. Earl Lovelace, Ripley, Surrey.

TEN PELARGONIUMS (distinct varieties, in pots, not exceeding 8 inches in diameter).—First, Mr. Charles Turner, Royal Nurseries, Slough. Second, Messrs. J. Dobson & Sons, Woodlands Nursery, Isleworth.

EIGHT FANCY PELARGONIUMS (distinct varieties, in pots, not exceeding 8 inches in diameter).—First, Mr. Charles Turner, Slough. Second, Messrs. J. Dobson & Sons, Isleworth.

SINGLE SPECIMENS OF NEWLY-INTRODUCED, EXTREMELY RARE, OR BEAUTIFUL PLANTS, IN OR OUT OF FLOWER, HARDY OR EXOTIC.—First, Mr. S. B. Williams, Nursery, Holloway. Second, Mr. W. Bull, King's Road, Chelsea. Third, Mr. G. Rogerson, gardener to Capt. Jefferys, R.N. Foot's Cray. Third, Mr. G. H. Bunney, Stratford. Three equal Fourth Prizes, Mr. W. Bull, King's Road, Chelsea.

SIX PLANTS OF CINERARIAS (in pots, not exceeding 11 inches in diameter).—First, Mr. Charles Turner, Slough. Second, Messrs. J. Dobson & Sons, Isleworth. Third, Mr. James Burley, Nursery, Limsfield, Surrey. Fourth, Mr. W. Lovesey, gardener to J. J. Fry, Esq., Baston Hayes, Bromley.

MISCELLANEOUS.—Prize, Mr. G. H. Bunney, Stratford. Prize, Mr. Wm. Paul, Waltham Cross. Third, Mr. James Hurley, Limsfield. Fourth, Mr. H. Lavey, gardener to E. A. DeGrave, Esq., Fetcham, Surrey. Fourth, Mr. William Bull, King's Road, Chelsea. Fourth, Messrs. F. & A. Smith, Dulwich. Extra Prize, Mr. Charles Turner, Slough; Mr. John Porter, Paragon Nursery, Brixton Hill. Highly Commended, Messrs. F. & A. Smith, Dulwich.

CUT FLOWERS.

TWENTY-FOUR TULIPS (distinct).—First, Mr. Charles Turner, Slough. Second, Mr. B. H. Botteridge, Milton Hill, near Stevenage, Berks. Third, Mr. Nathaniel Norman, 98, Crescent Road, Plumstead. Fourth, Mr. James Batten, Brook Street, Clapton.

TWENTY-FOUR PANSIES.—First and Second, Mr. J. James, gardener to W. F. Watson, Esq., Isleworth. Third, Mr. Edward Shenton, Hendon Park Nurseries.

FRUIT.

Class A.—PINE APPLE (single fruit of any kind).—First, Mr. Andrew Stewart, Chatsworth. Second, Mr. Thomas Page, gardener to W. Leaf, Esq., Park Hill, Streatham. Third, equal, Mr. George Cameron, Goodwood Gardens, Sussex; Mr. James Drewett, gardener to Mrs. Cubitt, Denbies, Dorking. Fourth, Mr. T. Page, gardener to W. Leaf, Esq., Park Hill, Streatham. Extra, Mr. Walter Davies, Sarch Green, Middlesex.

Class B.—GRAPES (Black, single dish).—First, Mr. William Hill, gardener to Ralph Sneyd, Esq., Keele Hall, Staffordshire. Second, Mr. Archibald Henderson, Trentham, Staffordshire. Third, Mr. George Wortley, gardener to Admiral the Hon. P. Cary, Norwood.

Class C.—GRAPES (White, single dish).—First, Mr. Charles Powell, gardener to Dr. S. Newington, Ticehurst, Sussex. Second, Mr. John Embury, gardener to A. Moss, Esq., Chadwell Heath, Essex. Third, equal, Mr. F. W. Durrant, gardener to the Hon. Col. Duncanson, Wareley Park, St. Neot's, Hunts; Mr. T. Page, gardener to W. Leaf, Esq., Park Hill, Streatham. Fourth, Mr. Henry Baker, gardener to J. Harrison, Esq., Belgrave, Leicestershire. Extra Prize, Mr. Thomas Bailey, gardener to T. T. Drake, Esq., Shardeloes, Amersham, Bucks.

Class D.—GRAPES.—First, Mr. William Hill, gardener to Ralph Sneyd, Esq., Keele Hall, Staffordshire. Second, Mr. H. Baker, gardener to J. Har-

clients, stating that you had been imposed on by getting from America two consignments of the Early York, one of which turned out to be (said you) a worthless late Peach, and you then offered to send, gratis, the true Early York to all those who had got the spurious one? I got the spurious one, but I am far from thinking it worthless. It forms the most beautiful of orchard-house trees. The blossom is different from that of all other Peaches, exquisitely cupped, a charming colour, lasts double the time of other blossom, and every one produces a fruit. Last season this small tree had about two hundred Peaches, which I thinned down to one hundred, and even that was far too many. Yet they looked so pretty I could not bring myself to remove more. They ripened in November, and although not rich nor very sweet, they were pleasant and refreshing; the best of them were used with a little sugar, and the small ones made into a pie. I cut down the two largest branches of this tree last autumn, and those that remained are now full of young fruit, and making excellent spurs for next year.

"You sent a true Early York in the batch of seven which you presented to me some time ago, and I found it to fulfil all the promises you made. It bore forty-two fine fruit last year.

"A great deal of the success of the orchard-house depends on getting the sorts adapted for that mode of culture. For instance, those that make short joints and are prolific, such as the Grosse Mignonne, and Galande Peaches, Elrage, Violette Hâtive, Downton, and other Nectarines; but the Noblesse, George IV., and trees of that class, are too long in the joints and of straggling growth. My best tree for this year is a Downton Nectarine on which there are a hundred fruit well set, and most of them larger than a hazel nut. The tree is in a tub and not much more than 3 feet high. I shall also have a grand crop on my potted trees of Green Gage, Orleans, Coe's, Jefferson's, Guthrie's Late Green, Mirabelle, and a large purple Plum the size of a duck's egg, name unknown, and an excellent one for preserving and a very showy fruit. The only idle Plum tree in my orchard-house is a Purple Gage, which I do not think will have more than a dozen.

"Outside, some of the Pears are almost idle, but some of them promise very well. My four trees of Gansel's Bergamot double worked are all loaded. I find this sort when double worked to be perfectly hardy and a never-failing bearer, and I have one of them now as an open espalier.

"Beurré Bretonneau is very hardy and bears freely, but the fruit does not soften. Duchesse d'Orleans does not bear at all, ditto Urbaniste; and those I mean to expel or cut down and work them with a better sort. I had no idea until this year that Cherries made such interesting trees in the orchard-house. They are beautiful when in bloom and when the fruit has coloured; the slender branches of one of my pyramids, a large-leaved tree, I think Belle Magnifique, bend down so gracefully and the foliage is so fresh and healthy, that it looks quite charming, and I can now understand, what I did not before, why you wished to have a Cherry-house.—JOSEPH MEADOWS, *Wexford.*"

PLANTING OUT BEDDING PLANTS—EFFECTS OF POTATO-STEMS BEING FROSTED.

It may reasonably be expected by this time that the winter is over, and we may be able to make a fair estimate of our available strength in the bedding-stuff line. The fine weather of April was highly favourable to the hardening off of the young stock, and, doubtless, those that are situated like myself, with a limited stock of pots and boxes, have felt an irresistible temptation to put some of it into their summer quarters. And finding the barometer moving downwards a little yesterday morning, and the wind shift to S.E.S., I reckoned upon a favourable change of weather; and as I was cramping other things for the want of boxes—and to save time, trouble, and room, I box everything I can, and make boxes out of everything that falls in my way—I at once put out a good batch of Scarlet Geraniums, yellow *Calceolarias*, purple and white *Petunia*, with the following annuals in small bunches between the plants, taken up with a flat trowel and the roots undisturbed and some of them showing bloom. *Collinsia alba* and bicolor, *Limnanthes Douglasii*, *Nemophila insignis* and *grandiflora*, and *Venus' Looking-glass*. I reckon that at the latest a fortnight's fine weather will bring them into full bloom and fill up the beds, and should the weather prove bright and sunny they will shade the roots of the other plants till they get fairly established.

But to-day (May 8th), has thrown a gloom over yesterday's work. Snow fell from about half-past four in the morning till mid-day, and at one time more than an inch deep on the ground, and the probability is, a frost to-night; but having secured them as well as I can with yew and fir branches, I trust a slight frost will not injure them. Hitherto having been very fortunate with them, not having lost a score out of more than six hundred cuttings of *Calceolarias*, sorted kinds, and kept in a cucumber-frame throughout the winter. All the cuttings of Geraniums, with the variegated and others, kept in pots during the summer have been kept with scarcely any loss, kept in a home-made cupboard-kind of place with a glass front with a flue a little above the floor; but the old Scarlet Geraniums although taken up before the frost touched them have nearly all died in the same place, it being the only place I could keep them secure from frost.

I should be glad if a few of the readers of THE JOURNAL OF HORTICULTURE would assist me a little in trying to prove the effects of frost on the Potato. Some few years ago I had a row at the end of a bed up much earlier than the rest, and, in consequence, were cut down to the ground with the frost, and their being a different kind to those in the bed, made me remark more particularly the effect at lifting time, and I rather unexpectedly found them equal to the others. Since then I have yearly tried the same experiment with the same result, and in the year 1859, on the 1st of April, there were 12° of frost. I then had a Peach-border several inches high, but were entirely out off. They recovered that and were again out off, one portion the size of a Russian mat I covered and were not frosted at all. Yet, at lifting, I could not discover the least difference whatever—they were as early and equal in quantity and in quality. Now, there will be numerous opportunities of trying the experiment this spring, and by putting a few sticks to those that have been frosted and making a memorandum to that effect so as to bear it in mind at lifting time, the thing can easily be settled by giving the result in THE JOURNAL OF HORTICULTURE. Most gardeners not having pits for their earliest crop can bear testimony to the trouble of covering up their earliest Potatoes till after the fear of frost, and at a time, too, when there is so much other work to do; so that if that portion of labour can be saved it will be worth the trouble in proving.—THE DOCTOR'S BOY.

ROYAL HORTICULTURAL SOCIETY.

MAY 14TH.

FRUIT COMMITTEE.—H. G. Bohn, Esq., in the chair. A letter was read from Mr. Spencer, of Bowood, recommending a Local Committee for the county of Wilts, which was approved, and Mr. Spencer appointed Chairman and Convener. A paper on the physical condition, and geological structure of the county of Oxford was received from Mr. Bailey, of Nuneham, Chairman of the Oxfordshire Local Committee, and read before the Committee, and the thanks of the Meeting were given to Mr. Bailey.

The prizes offered by C. Wentworth Dilke, Esq., and W. Wilson Saunders, Esq., were then taken into consideration, and one of those offered by Mr. Dilke, of the amount of £5, was unanimously awarded to the seedling Pine Apple raised by Mr. Oates, gardener to Lord Leigh, Stoneleigh Abbey, Kenilworth. That offered by Mr. Saunders, of the amount of £5, stood over for consideration at next Meeting, when Ingram's Hardy Prolific Muscat Grape is expected to be exhibited in better condition than it was shown during the past season. The remaining prize of £5, offered by Mr. Dilke, was not awarded, but carried forward to next year.

The seedling Strawberry *Eclipse* exhibited last year by Mr. Willis Reeve, of Canewdon, near Rochford, was again brought forward, and fully maintained the reputation it acquired last year, when it was considered a valuable forcing Strawberry, possessing a high Pine flavour; it was awarded a First-class Certificate. Three seedling Strawberries, raised by Capt. Trevor Clarke, were brought from the Society's garden at Chiswick, one of them a black variety with a deep blood-coloured flesh, and another of a pale scarlet colour; but neither of them was considered desirable as new varieties. A collection of six sorts of forced Strawberries were sent from the garden by Mr. Eyles, which showed that the earliest forcing variety is May Queen, and the second earliest is Black Prince; but Black Prince is the most highly flavoured, and decidedly the preferable variety. All the others, including Keens' Seedling, which was flat and rapid, and Richard II. and Highland Mary, which were very acid, were

less. As it was, many plants in a growing state had their juices sealed up the first night with their death-warrant; others imperfectly ripened suffered less in degree, still they were hurt; and as the last few winters had been tolerably mild, many plants had been left out of doors not usually met with there, and these, of course, have suffered most, as will be shown by the following list, to which a few notes on each are appended.

Acacia verticillata.—A fine plant of this, growing against a west wall, flowered beautifully every spring for some years, and in the autumn was thickly set with buds again, but the frost has entirely killed it. A few laurel boughs stuck against it were all the protection it ever received, and it had the same the past season, but to no avail—it is completely killed. A plant of *A. armata*, after lingering on a year or two, was killed the winter before; but the one mentioned above was in robust health up to the time of severe weather setting in.

Abelia uniflora.—A small plant of this has stood against a south wall with very little damage, and with no other protection than a few laurel boughs stuck against it during the severe weather.

Azalea indica.—One or two plants in sheltered positions against a wall very little hurt; but some plants in an open bed are killed to the ground. They were, however, not in good order in autumn.

Berberis Darwinii.—This is certainly one of the most hardy plants we have, and richly deserves a place on every wall. It does not seem to have taken the least harm during the past winter, and at the present time (20th of March) is loaded with flower-buds which in due time will show themselves. *B. Fortunei*.—I have never been able to make much of this. A shabby foliage and slow growth are a poor compensation for the few flowers which it produces. *B. japonica*.—A small plant of this does not seem to have suffered in the least from the winter. Its position, however, is not well chosen, as its foliage suffered even from the little sun we had last year. *B. Bealii* is much like it in appearance and habit.

Camellia.—A large plant of this on the lawn was loaded with flower-buds in the autumn, but they were all killed with the frost, and have all fallen off, and it has shed more leaves than I should have liked to have seen; but those that remain and the wood-buds are all right, proving the plant to be as hardy as the majority of evergreens.

Ceanothus papillosus.—Killed to the ground without the slightest hopes of recovery. A fine plant, had endured several winters, and bloomed profusely in the early summer; but it is lost now. *C. pallidus*, *discoloratus*, or *dentatus*, for I have heard it called by all these names.—It has a bright-shining green leaf, grows rapidly, and flowers sparingly. Some plants in exposed places are killed, and even against a south wall one or two are all killed but the thick main stem, but two plants in a more favoured spot are but little hurt. *C. azureus*.—This is perfectly hardy, only the tip ends of some of the shoots with some of the foliage are hurt, the main plant promising to become as ornamental at the proper time as before. This fine variety flowered twice in the hot summer of 1858 and 1859, once in the early part of June, and again in September.

Coronilla glauca.—Killed to the ground and below the surface in all but one or two very favoured spots.

Cotoneaster Simmondsii.—This broad-leaved variety has stood well against a bleak north wall. It promises to be a useful addition to this class of plants.

Chinese Privet.—A large plant of this, which for some years flowered abundantly in August and September, did not open its blossoms in time to become fully expanded before winter set in, and they are there now. The tree has taken no harm, but it is not likely that there will be any bloom the ensuing summer.

Clianthus puniceus.—A handsome plant of this, growing against a south wall, was in the very worst possible condition to resist frost. For the first fortnight in December its shoots were still advancing, and covered with flower-buds, some of which were expanded. Such a state of things gave little hopes of its enduring the long-continued frost, even when covered up with a double mat; and the result is that it is killed down to within a few inches of the ground, and there is great uncertainty of its growing again. I regard this and the *Acacia* as the most serious losses we have had in this way. Another plant of the same kind suffered in like manner.

Colletia Bicktonensis.—This singular-looking plant being removed about a year ago did not prosper well last year, and I fear it is killed. It was quite unprotected.

Cupressus funebris.—One plant in a low situation a little hurt, another in higher and drier ground unhurt in the least. *C. Lambertiana* is as dense and green as it was in October, and is a fine object.

Cistus ladanifera.—Quite hardy, not injured.

Cork Tree.—A fine specimen of this is much injured in the foliage, but we hope not seriously hurt in any other way.

Desfontainia spinosa.—Quite hardy, not the least hurt by the frost, but it is of slow growth, and has not flowered out of doors here yet.

Escallonia macrantha has its leaves browned much where standing as an open standard, but against a wall it has not taken much harm. *Escallonia Monte-vidensis* has lost more foliage than usual, and the tip ends of the shoots are all killed, but the plant has not taken any vital harm.

Eugenia Ugni, and *E. apiculata*.—The first-named is certainly the most hardy, as the latter has lost a large limb or two, the foliage remaining being unhurt.

Euonymus japonicus.—These as open bushes are all more or less killed, and some I fear will hardly grow again.

Fabiana imbricata.—Beautiful as the flowers of this plant are, it will never take a first place as a covering to a wall, the sickly-looking hue of the foliage being sadly against it; but it has stood the winter not amiss, though not scatheless, and a small plant of it is killed.

Forsthia viridissima.—Quite hardy, but the tips cut with the frost. There are, however, little signs of its blooming this season.

Garrya elliptica.—The leaves a little blotched, but the plant not seriously injured. Its graceful-looking catkins were less plentiful the past winter than heretofore, owing to the unfavourable summer no doubt.

Griselinia littoralis.—Quite hardy, but rather a slow-growing shrub; and as it strikes freely from cuttings, I dare say, when Mr. Appleby can induce any of our floral friends to try the effects of evergreens for display instead of the ordinary bedding-out flowers, this will come in very handy. A pale green foliage, very thickly set on shoots that promise to bear cutting well. It will, no doubt, be a favourite in that way.

Hydrangea.—Most of these lost the greater part of last year's growth by the wood not being ripened, and leaves still on when winter set in.

Illicium floridanum.—Also of slow growth, but quite hardy. It has not showed flower yet. Against a wall it stands the winter well.

Jasminum.—These are quite hardy; and the *J. nudiflorum* is now flowering instead of at Christmas.

Laurus aromatica seems hardy but makes no progress. If it would only grow freely it would be a handsome shrub.

Lonicera flexuosa, or Evergreen Honeysuckle, has lost more foliage than usual; but is alive at the base of each shoot, the tips being killed.

Magnolia grandiflora and *M. Erxmouthi*, very much cut and have lost nearly all their leaves. Some plants growing against a south wall had several unexpanded blossoms when the severe weather set in at the middle of December; but, of course, they have been all killed, and the plants, by losing so much of the tips of the shoots, will be crippled for the whole of the year, that we can hardly expect bloom in any quantity for two years.

Myrtle.—Much injured, but not vitally. The foliage nearly all gone; but, by being spurred in, the plants will do very well again.

Pampas Grass.—Some plants quite killed, others nearly so; and the flowers of 1861 will assuredly be late, unless the season be a very favourable one indeed.

Phygelius capensis.—Standing against an east wall this plant has suffered less than many, and promises to be a useful auxiliary to our list of half-hardy, half-shrubby, and half-herbaceous flowering plants.

Pomegranate.—We have only a very small plant of this and recently planted, which seems to have suffered to a hopeless degree; but this is no guide to the plant's hardihood or contrariwise.

Pernettya macronata speciosa.—A pretty small-leaved shrub, quite hardy and untouched by the frost. This seems as hardy as the common Box.

Rose.—This extensive family may be dismissed without going into names, further than that all the Tea kinds are killed; but hardy China and Hybrid Perpetuals are alive. The China, however, are in most cases cut down to the ground, but are growing again. A Banksian or two against open pillars are either killed

outright or so far injured as to be useless; but our loss amongst the Roses here is trifling, compared with what is reported elsewhere of the Hybrid Perpetuals, these being unhurt, and some of the Teas on standards in dry situations have escaped.

Stantonia latifolia much cut but not killed, although growing against a south wall.

Veronicas of the New Zealand species, as *Andersoni*, *Sieboldi*, *Lindleyana*, and others, in most cases killed entirely. Some against walls in favoured places may perhaps shoot up again from the bottoms or from the old stems that show a little life in them.

Weigela rosea.—This appears quite hardy, and is shooting as freely as ever from all but the extreme tips of last year's wood, but it is not likely to bloom so freely as in former years.

Yuccas.—These interesting plants have suffered in a certain degree, their leaves being broken, and the plants altogether seem much injured in appearance.

The above list represents the damage we have sustained in the class of hardy and half-hardy shrubs, as all our *Bays*, *Laurustinuses*, *Aucubas*, and others have escaped any important injury except in some cases where *Laurustinuses* had formed part of a clipped hedge, and the late shoots of last year are killed, and one or two other plants have suffered in like manner where so situated. The *Pinuses* have, in most cases, escaped. None of the *Deodars* are in the least hurt. *Araucaria braziliensis* or *Cunninghamii* looks badly, but it has always done so at this season, and a fine plant of *Wellingtonia* is browned a little on the east side where the morning sun first caught it. *Cupressus Lambertiana* is as green as a Holly, and all the other *Pinuses* seem untouched by the cold.

Amongst plants of humble growth everything not established as hardy has been killed. The hardy *Verbena pulchella* and its variegated compeer are both destroyed, as is also the *Linum flavum*; and what few *Calceolarias* were left out have all perished. This is, doubtless, owing to the small quantity of snow we had—merely sufficient to colour the ground; but the severity of the frost told in cold pits as well. The *Calceolaria amplexicaulis* cuttings in a pit with a wooden shutter over them mostly all perished, while the more woody varieties of *Calceolaria* scarcely received a check, or at most lost very few plants; and the variegated *Arabis* growing in the same place is equally unhurt. I may also observe that the outside plants of this most useful dwarf edging plant seem as hardy as a Primrose, not being in the least injured by the weather; but some plants have succumbed to the cold. Very few *Catchflies* are alive, and old plants of *Cheiranthus Marshalli* are, in many instances, dead. Stocks are also entirely killed, and many *Wallflowers* are sufferers also; and I have no doubt but a close examination will reveal other losses in this way.

In the kitchen garden Broccoli are very scarce; almost all the tall plants are entirely killed, but some dwarf kinds are left. Winter Spinach is all but gone; and Parsley, which usually survives any amount of cold, has died away in a great measure at the root. Cauliflower plants where not well secured have suffered sadly. Cabbage plants are better; and though Greens of the various kinds have been scarce, still the plants have not been so completely killed as has been the case in some places. Turnips we have none, but their absence is not entirely owing to the weather, as our supply is generally from another source. Sweet Herbs have perished almost wholesale. Thyme, Savory, and Mint seem all gone, and Sage very much cut. Some other losses may, perhaps, be added to these, but the list is already extensive enough; and though no one wishes for so severe a winter again, it has not been half so bad as the summer which preceded it. On the contrary, the frost has certainly improved the land for tillage purposes, and with a favourable season we may hope to have a more pleasing report to make another time.

J. ROSSON.

KILMARNOCK PANSY SOCIETY.—On the 12th inst. the West of Scotland Pansy Society held their first Meeting. The business was, for the most part, of a preliminary nature. A few good flowers were exhibited, the best of which was General Neil (Smith's), a first-rate yellow ground flower, which can hardly be beaten in the beginning and end of the season. The Society will hold fortnightly competitions throughout the season; but the most important part of the Society's operations was the appointment of ten of its members (five a quorum), to adjudicate on the merits of any new varieties that may be forwarded by members or others. From the well-known abilities of that

Committee, and the ordeal all flowers that are submitted must undergo, it will be impossible for anything not in advance of existing varieties being recommended or awarded a certificate of merit. This branch of the Society has been attached with the view of checking the practice of sending out worthless varieties, which has latterly become far too common an occurrence. Single blooms may be recommended as such; but three blooms must be submitted at once or in succession to obtain a certificate of merit. The West of Scotland has long been characterised as a great Pansy-growing district; and many of the leading varieties owe their existence to the growers of that beautiful flower in this locality; and were other districts to adopt a similar course, that would materially assist the West of Scotland Society in their laudable endeavours to further improve the Pansy.

CULTURE OF THE GRAPE VINE.

(Continued from page 44.)

THE borders should be made and finished as early in the autumn as possible, that the soil may be settled down to its proper level before planting time. Some authors recommend planting after the Vines have made their spring shoots in boxes, baskets, or pots. I have tried that plan, but I found that the roots could not be so well spread out in the soil without injuring some of the newly-made ones. I, therefore, greatly prefer the planting just before the buds begin to swell: in that state the soil can be shaken out of the ball, and roots disentangled without injury, and spread out in a proper manner in every direction. On this point, however, I shall write more particularly under the head "planting."

PROCURING THE PLANTS.—If the cultivator intends to purchase his young Vines from a nursery, he ought to go to the nursery early in the autumn, and choose the plants himself, marking them on the spot at once. Well-grown one-year-old plants raised from eyes are the very best for the purpose. If they are older the roots are so coiled round the sides of the pots that they cannot be uncoiled without some being broken, cracked, or bruised. Nurserymen now grow one-year-old Vines quite strong enough for planting permanently. The Vines should be sent to the purchaser as soon as their leaves are fallen—not later certainly than the end of October.

As soon as they arrive they should be unpacked carefully, so as not to crack any of the shoots. Let them then be pruned to such a length as may be required. If they have to be brought through a hole in the front sill of the house, then prune them so as to leave from four to five eyes within the house; but if they are to be planted inside, then cut them down to three eyes. When all are pruned then plunge the pots either in leaves, old tan, or ashes, against a south wall, where they may remain till the planting season. If the Vines are intended for the open wall they may be planted out at once, protected with litter over the roots. By being pruned in autumn there is no danger of bleeding, which they are liable to do if pruned just before they are planted.

Propagation.—Some gardeners raise their own Vines, but unless they have plenty of space or a house especially well adapted for the purpose, I consider there is no saving in rearing their Vines at home. Better have them from a respectable nurseryman—one, of course, that can be depended upon to send them true to name. However, as my essay would hardly be complete without a brief notice on propagating the Vine, I had better give the right way to do it. The Vine is almost as easy to strike as a willow. It may be propagated by layers, by lengths of two or three-year-wood, by a small piece of two-year-old and two or three buds above, and by single eyes of the last year's growth.

Layering is, or ought to be, quite discarded; for when a layer is cut off from the parent stool, it receives such a check that it requires two or three years (even with the best management), before it recovers the separation.

Old Shoots also require considerable care to make them push roots sufficient to support a strong young shoot. The two-year-old wood cut off a few inches below the point where the young wood of the same year has pushed from makes good cuttings, and with little care makes good plants the following year. I have grown good Vines by this plan fit to plant out the following year. The only objection is, that a stump always remains at the base of the Vine, which is liable to decay sooner on that account.

BEE-HIVES AND THEIR APPURTENANCES.

(Continued from page 53.)

WOODEN-TOPPED STRAW HIVES are favourites, and used principally for any early prime swarm set aside as a swarmer, affording superior facility for removing the surplus store compared to the dome-shaped, which are more used for seconds and late prime swarms not expected to yield anything the first season. These are cylindrical in form, the straw bands began on hoops, are 14 inches wide and 7 inches deep. Round the topmost band of straw one or two outer or second bands are continued, which serve as a rest for a flat circular ring of inch-wood—inner circumference 14 inches, outer 18 inches; on this is placed the usual 1½-inch bars with slides secured with three-quarter-inch brass screws, therefore moveable at pleasure; this top is fastened to the hive by stout screws inserted through the under side of the outer straw bands. Any inequality between the straw and wood has to be made up with putty or Portland cement: little crevices about the windows in the same manner. In case the latter should start from its place, I usually slip a little cord over the top and bottom of it, which, lying between the straw bands, is not much noticeable.

SLOPED WOODEN-TOPPED STRAW HIVES, I have latterly adopted as an improvement on the last, taking the hint from my roof bees, which always select a part with a good bevel. They are in every respect similar to the above, with the exception of the straw bands being kept thinner in front, thickest behind, and gradually tapered on each side between the maximum and minimum, the one 9 inches and the other 7 inches, including the hoop. I think the bees thrive fully better, and come through the winter in finer condition in this hive, ventilation being doubtless promoted by the bevel. Little slips of wood tacked on prevent the super from sliding.

DEPRIVING-HIVES.—For depriving-hives, the most suitable material is wood. The shape, is unquestionably the nearest approach to a sphere—an octagon. This and double swarms were two points on which that good old bee-keeper Thorley was perfectly sound, writing nearly 120 years ago: therefore the

STEWARTON OCTAGON-HIVES have a prominent place in my apiary, being, I feel confident, the cheapest and best ready-made hives for practical bee-keeping to be had. I order mine direct from Stewarton, where I find, from the demand, they can be purchased in quantity, with better workmanship, at a price nearly one-third less than local tradesmen will undertake to supply them at. To those of your readers who have them, they require no description; to those who do not yet possess them, my advice is, Obtain them as soon as possible, and they will by-and-by speak for themselves. Should these lines catch the eye of any of their makers, I would suggest the propriety of sending along with each set concise printed instructions as to their management. I am led to make the remark from observing, in a recent Number, a querist asking if they were wrought collaterally, and also meeting a clerical friend who complained of his want of success. The first question elicited the cause—How were they peopled and protected? A first swarm, no cover to be sure, that would quite spoil their appearance. Expect honey from a single swarm, in a set of Stewarton-boxes the first season—half-inch wood unprotected! Why, the only wonder was, that, despite all the attractions of such a terrestrial paradise as the manse garden, they had not at once made a precipitate flight back to the old-established stock from which they had seceded. Such of your readers as occasionally indulge in amateur hive-making would find the advantage of ordering along with their boxes a supply of bars and slides, forming the tops of these hives, long lengths preferable—say 7 feet for the former, 7½ feet for the latter. Bars 1½ inch for stocks, and 1½ inch for supers. They can be easily cut into any length, and fitted, instead of the clumsy adapters and crown-boards, to all the old hives of the apiary when again to be used, or the new ones about to be constructed. Odd ends of slides, the upper edge run off with a plane, are very useful to work shutters, moveable entrances, &c., in. I like to procure at the same time several additional octagon honey-boxes, both the fourteen-inch for these, and the twelve-inch size; they make cheap and tasteful supers for all the other flat-topped hives.

The beauty of the Stewarton-supers, that so attracted the lingering admiration of "UPWARDS AND ONWARDS" when in Glasgow, was not, as he supposed, indebted to the dark-coloured product of the heather then in bloom, which, on the contrary, could have quite soiled their surpassing purity. They are

generally to market before it comes into flower. His surprise at the superiority of the octagons surely carried him too far when he awards the palm as a bee country to our poor bleak Scotland, over the rich pastures and flowery meadows of his own England. The contents of these supers are drawn chiefly from one little plant—the white clover. The light sandy soil of a large portion of Ayrshire is favourable to its natural production, even were the farmers so neglectful of their own interests as not to sow it liberally when laying down their pasture. The bee-keepers reap their share of the benefit by the painstaking and skilful manipulation of double prime swarms in a good hive while it remains in bloom; indeed, in many instances, moving them inland bit by bit, as the flower fades, to later localities, till the supers are completed; and then, and not till then, as a reward for their industry, are transported to the moors to rifle the purple heather of its dark juice for their own benefit during the winter. Such, having little local value, being sought after principally by the tourist. Thyme honey is only to be had in quantity in some districts on the border.

SQUARE WOODEN HIVES retain a place with me for two reasons only—the first, that to the amateur dovetailing *four* boards neatly together is much less of a puzzle than *eight*; secondly, they afford space for a larger window for observation. The bulk of these hives is 14 inches square within, by 7 inches deep, to work with the large-sized octagon supers. They are fitted with eight bars, six of them 1½ inch wide, the remaining two 1¼ inch, are placed one at each end. These every bee-keeper knows are devoted exclusively to honey, and are, therefore, better than the broad size. I have also tried, and still have, nine bars 1½ inch wide in some fourteen-inch straw hives, keeping them closer at the centre, so as to leave as wide end-openings as possible. The bars are notched out at each end the breadth of the back and front, so as to allow the slides to work flush thereon, project barely an inch behind (the corners nipped off for appearance sake). The object of this is to assist raising the bars when the three-quarter-inch screws by which they are fixed have been drawn. They are constructed of well-seasoned yellow pine front and back inch-dressed, ends three-quarter. The inner sides, unless very clean, had better first be dressed, and then run over with a toothing plane. Should that implement not be at hand, a good substitute is a bit of perforated zinc, the cut edge drawn along with the grain of the wood till it be well roughened: this materially assists the ascent of the heavy-laden forager. One window of *thick* glass 11 inches by 4½ inches placed behind, when bedded in the putty to prevent its starting, fix with four small sprigs; the putty above the glass then laid on. The shutters of wood 12 inches by 5½ inches dressed to a quarter of an inch thick; a check in the front edge top and bottom to work in pieces reversed slides as already described for straw hives. If I used a second window it would be in front, although more in the way there, it is of use by throwing the light through the hive at first, and showing the commencement of breeding in the spring: whereas an end window is nothing but a useless disfigurement to some hives, exposing to view only the end-sealed honeycomb. I have also wrought with considerable success, a size 13 inches between the ends, 12 inches front to back, and 9 inches deep, fitted with eight bars 1½ inch wide, in every other respect same as the above, with a proportionately large window and shutter, both fitted with end-handles for lifting, 4½ inches long by 1 inch deep, and three-quarters out, and entrances moveable, as will afterwards be described, 5 inches by three-eighths of an inch. These, as well as all my hives, are, of course, duly protected from the weather, when standing singly outside, by a good fresh straw thatch or some other cover.—

A RENFREWSHIRE BEE-KEEPER.

(To be continued.)

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

SOME eleven years ago, a kind neighbour, when flitting from these parts, presented us with a hive of bees, and where to place them I could not tell, for from the only corner where I could domicile the insects I had grubbed up the protective end of an old yew hedge, anticipating the erection there of an orchard-house; but owing to the umbrage taken by a neighbour, and a flaw which the lawyers found against the rector felling two oak trees to repair his house upon his own ground, which had been the custom far beyond the memory of the oldest inhabitant, an

injunction in Chancery caused the timber to lay and rot, my orchard-house to remain "the baseless fabric of a vision," and to cost the rector between £200 and £300.

Now, having lived with the rector nearly all my life, it grieved me much to think that I should so unwittingly have been the cause of his losing so much money; but where to place the bees, that was the question. It was of no use to stand still and call upon Jupiter for assistance so I at once ran up a wattle-work fence, 7 feet high, on the site of the removed hedge, to be annually strengthened by driving in stout poles, planted Irish ivy against it, and, behold, from that time an evergreen shelter was established. Had I erected an orchard-house there, later experience has proved that it must many a time have stood the risk of being blown away; or, at least been partly destroyed over and over again by tiles and chimney-pots.

"Why, Brotherton, I told you to place the hive in the cloth, or otherwise rest it upon a piece of board the full size of its bottom." "Ah! I didn't use the cloth, for I thought that piece of board would do very well at this time o' night." "Thought! I suppose you calculated on the bees remaining as dormant and glued to their bod as you would be yourself? But look! it is not so, you have scattered them along the road, and numbers are crawling about you. There now, quick march! pray go and bring the stand as quickly as possible."

Poor old Brotherton! that was easier said than done. He has in his time been fighting for his country in different parts of the world, and is awarded a small pension, with one of his legs from the hip downwards twisted, and fixed at nearly right angles with the other, so that neither his pace nor the rough journey to the bees was much to be wondered at.

It was at Michaelmas time the hive thus arrived to us, considerably weakened by the distribution of the bees. The remainder lived through the winter, and became strong and populous during the next season, without offering to swarm. In the following year they threw a strong swarm and a cast, and three common stock-hives remained our bee capital. I was quite a novice, and did not understand supering, and as to destroying the poor bees for the sake of taking their honey, I could not do it; I had become attached to them, and they had become attached to me, and my attention was becoming excited by Mr. Payne's writings in *THE COTTAGE GARDENER*. Withal, the hives, after the manner of the old-fashioned common hives, did not behave through the next winter satisfactorily. The queen died in the swarm first hived, and the bees forsook it and the honey; and the cast put into the other hive kept me continually dancing attendance with an elder-wood trough feeder. The original hive remained strong and healthy, and from the quantity of dead bees and fighting observed in February, I became aware afterwards that all the bees that could do so had joined it from the queenless hive.

In fact, I was getting quite bewildered, and I determined in future to adopt Mr. Payne's cottage-hive system. He was written to, and kindly sent me a supply of his flat-topped hives, supers, and a bee dress, and I set to work with fresh vigour. My original hive threw me a swarm only the third year, and the cast stock gave a late swarm, so I had now established two new hives, and four in all. The early swarm in the new hive worked us some honey, and I cut a hole also in the top of the original hive, which gave a full super—great events!

Two years more passed, and I had established a rank and file of the Suffolk hives, and notwithstanding the supering, they would swarm; and in the winter time I found that deaths, reverses, continual attendance, and anxieties attached to them, even till my state of mind was becoming worse than my first.

Then followed experiments hopeful and hopeless; the jokes of my friends, and the metal (in two senses of the word) I was put upon, served to urge me on considerably, and to fill a lumber-room with I do not know what of bee apparatus, a description of which, and all that it led to, it would be useless to cumber these pages with. One plan, however, began to decide for me its superiority and I have that original hive now in a flourishing condition, after doing duty for six years. I exhibited a glass, and a straw super of honey worked from it placed on a new representative-hive *pro forma*, at the Oxford Horticultural Show, on the 23rd of June, 1857. It was mentioned in No. 458 of *THE COTTAGE GARDENER*. Certainly it gained its full share of attention, and when I was absent from its presence I placed Brotherton conspicuous, to answer what questions he could, and he told me a Frenchman was eager to purchase the whole thing as it stood "at any price;" but it was

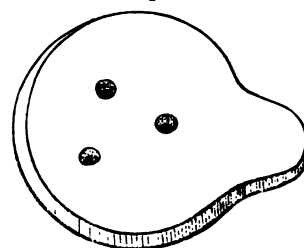
not for sale: my object entirely was for the poorer sort to see it and to take the hint; and you know from letters I have sent for your perusal occasionally, the judgment expressed on the quality of my honey, and the glass mentioned above was pronounced, at Messrs. Fortnum and Mason's, one of the best samples that ever entered their establishment. I also gained credit there for my plan of packing honey for carriage. So having already been "smiled upon," and, furthermore, considering six years' trial a sufficient recommendation, I will describe the plan as being most applicable to myself, in the hopes that it may also prove beneficial to others.

The aspect of my apiary is very good—*south-east, and gaining the early morning sun*, and from the situation of some beech trees, it becomes *shaded during the sunshine of summer by twelve o'clock, and remains so during the afternoon through the agency of the wattle-work fence*. The passages in italics must be taken into consideration by all apiarists in embryo, and allow me to add, they are well worthy of acceptance to all beekeepers whatever. The fence adjoins a corner of the house. My nearest hive is 8 feet distant from the latter (the garden front upon which my esperione vines are trained), and all the hives are placed in a line, 4 feet from each other, measuring from each pedestal, and 5 feet from the fence; this interval, and that flanking the house, are gravel walks. The ground in front of the hives is occupied as flower-border, and that beyond is cultivated garden. All operations are performed at the backs of the hives, and no person's walk, or shrubs and vegetables are allowed to grow so high within a certain distance as to interfere with the starting-point of flight, or return of the bees, and nothing immediately beneath and around the hives is allowed to grow; but the soil there is frequently stirred during summer and winter time with a Dutch hoe, for the disturbance of ants, &c., and to keep the soil dry and warm. A few loads of "log wood," stout limbs from barked oak trees, are annually purchased here to be sawn and riven up to heat the oven. Out

Fig. 1.



Fig. 2.



1. Pedestal, 6 inches diameter, 3 feet long.
2. Block-board, 1 foot 6 inches diameter, 2 inches thick, with three screw holes.

of six-inch diameter stems culled from these I form my pedestals, taking care to choose a limb with a branch grown out at its side thus (see drawing), and to saw it off at the fork *slightly slanting*, through the centre of the bulge *A A*, where a broader and tougher surface can be got to screw on the block-board (see drawing). This I form out of a piece of gnarled ash, 2 inches thick, and 1 foot 6 inches in diameter. It is screwed firmly on to the top of the pedestal, its lip pointing away in the direction that the branch took, with three three-and-a-half-inch-long screws placed triangular-ways, 3 inches apart, and having their heads sunk into sockets in the

block half-an-inch deep, so that in case of after-warps a plane may be worked over its surface to keep it perfectly level. The pedestals thus formed measure 3 feet 3 inches in length; the least split in them is well puttied up, and they are painted a dark ivy green colour, excepting the surface and the parts that are to become inserted in the ground—1 foot 6 inches deep at least. The soil that is dug from the holes to admit them, I take care to return it all again by degrees, and well ram it around

felt in awarding the prizes in consequence of the very large variety of plants exhibited, some of which were utterly unfitted to a London atmosphere. When a repetition of the experiment on a much larger scale was suggested this year, the difficulty which had been experienced was mentioned, and in consequence the competition this year is limited to Geraniums, Fuchsias, and Annuals. I feel that it is of no use encouraging the poor to cultivate plants which cannot repay them for their trouble, and which must cause them disappointment. By the rules you will see that each Exhibitor must on the day of the Show have had his plants in his possession rather less than seven weeks, and it is trusted that the great object in view—viz., the finding out, not who can buy the best plant, but who can take the best care of a plant, will be attained.

"At the same time the classes are so arranged that the inhabitants of the narrowest streets are not brought into competition with those who live in situations more favourable to the growth of plants.

"I think that the cultivation of plants is a very great civiliser, and I hope great good may come from the Show. I am in hopes that you may think the scheme worthy of favourable notice in an early Number.

"I may as well mention that although the programme says that only the fourth prize in each class will be given to plants out of blossom, there will be many more given in reality, because the people in the classes for whom the Show is meant, being without the means of procuring or taking care of many plants, could not insure having any in bloom at the particular time appointed for the Show, and much disappointment might be caused. Intending Exhibitors, it is known, regardless of the day fixed, would probably go and buy plants already in full glory or nearly so."

Now, if ever a step was taken in a right direction for benefiting the working classes, this is one. Nothing tends to raise a man, woman, or child above the temptations of sensual pleasures so effectually as a bright, cheerful, decorated home; and no home is so bright, cheerful, and winningly decorated, as that where flowers are fostered.

We have traversed the length and breadth of most parts of the British islands, and we record, as the result of our observations, that *life is longest, and the working classes are the most moral and well-to-do where a fondness for gardening prevails.*

This result of our experience is not extracted from rural districts only, for it is sustained by inquiries among the masters in the manufacturing districts. In Sheffield, Birmingham, Manchester, Coventry, Spitalfields, and elsewhere, those who cultivate florists' flowers, and those who love to search for wild flowers as members of the many botanical clubs that are so numerous among the weaving operatives, include scarcely any but men who are the most skilful and the most exemplary.

We think in all towns, whether manufacturing or commercial, the example set in Bloomsbury might be followed most advantageously; and in Bloomsbury we think they might have exhibitions for other flowers than those included in the present schedule—such flowers as the Auricle, Polyanthus, Pink, Antirrhinum, Pompones, Chrysanthemum, Cineraria, and Hyacinths, all of which may be successfully cultivated in pots and in city dwellings. Such shows would require to be held at three seasons of the year; thus the interest and care would be sustained throughout the twelvemonth. We think, also, that every exhibitor should pay a very small entrance-fee, to be carried to the funds of the exhibition.

One anecdote, and we have done.

We knew a village blacksmith, sober, industrious, and exemplary. Years passed, and we then found him in idle, sottish, ragged vagabond. We inquired of his brother how this ruinous change was caused, and the reply was this:—"When poor Fanny died, he married his present wife; and she never had home comfortable for him. Fanny kept things tidy—loved flowers, and had some for his button-hole on a Sunday—but she (his present wife), is no good, always gossiping, and pulled up poor Fanny's Geraniums to eat them."

CLIMBERS FOR A TRELLIS ON A NORTH-EAST ASPECT.

B. W. would be much obliged by the name or names of the handsomest and largest-flowered perennial Clematis, or other showy climber suited for a trellis, with north-east aspect. It must be perfectly hardy, as the situation is cold and exposed. Soil fine yellow loam. Locality near Ipswich. *B. W.* recollects many years ago seeing a splendid flower of the Clematis family and bought it, being assured it was quite hardy, but the first winter killed it; but *B. W.* must say it was placed in the immediate suburbs of London, where, from want of vigour, plants do not bear cold so well. Now would this answer (if you know the plant I refer to), for a climber in my small greenhouse where there is never a fire or any other covering but the glass to keep out the frost?

[For such a position out of doors we would use Clematis corulea, C. Hendersonii, C. flammula, C. florida bicolor; and such Roses as ruga and multiflora, and the hardier Noisettes. For the house grow Clematis Sieboldii, corulea grandiflora, Lonicera japonica, and Passiflora corulea, covering the latter with a mat or cloth in winter, as you use no fire heat.]

KEW GARDENS.

Of all the improvements in gardening for the last thirty years, none are so telling on the eyes which have seen the work of other days as the winter management of house plants, and the beauty and freshness of the plants themselves at the period of general potting in the spring. Kew is up to the highest mark in the records of this progress, yet the houses are not half large enough for the wintering of the vast collection.

When the new conservatories are finished and filled, as they will be before another winter, the gardeners at Kew may make larger specimens of their best plants; but they can hardly make them look more healthy than they are at present. The winter has hardly touched them, comparatively speaking. The annual deaths and casualties are not so heavy this spring as they have been in former seasons, yet the numbers of kinds of plants that are out there is not nearly matched in any establishment in the British dominions, nor anything like it. The situation is not at all favourable for holding out against frost, the water being constantly within a few inches of the surface in some parts of the grounds, and the whole surface not much above the level of the tide. It is the poor, hungry sand, and the gravelly bottom which save the exotic collections of Kew from severe seasons such as this last winter. Plants do not grow rank in such soil, and they ripen and harden before the winter, and if they are hardy anywhere it is in such soils.

I could see nothing to speak of among all their evergreens. No Rhododendron is hurt. The Sikkim Rhododendrons out in the lowest part of the grounds, but shaded and sheltered by some of the finest timber trees on the establishment, are safe as post-cum; and visitors to Kew at present must needs be told that the list of killed and wounded is made up by the writer from official documents, for neither they nor their informant could make the discovery in going over the grounds.

But it was the spring decoration in-doors that people from the country wanted me so much to report for years past; to whom I used to reply, "What can you expect that way in a botanic garden where nobody knows where to find room for the next plant he pots? Everything must be so crammed there that flowers are out of the question altogether." Indeed, such was my impression. I often wished myself to see their Acacias in flower; but then it occurred to me, that they may think I want only to criticise a certain deficiency. But this spring I had a very good excuse in the late frost, and so I went and found everything quite different from what I expected. Bulbs of all sorts forced for show as for a private conservatory; all sorts of forcing Geraniums, from Alba multiflora to Blanchfleur and Mrs. Johnson, which was new to me; Musk, Cherry Pie, and Violets, free as among country cottagers; Heaths, Epacrises, and Acacias as coming natural; magnificent Ferns, stove plants, and foliated fineries all on the exhibition style of look and growth; Orchids done on the Kingston model at last, and no soul or body allowed now to go in and out in all weathers, which was the ruin of many plants besides the Orchids.

It is all very well and very wise of the Government to get young people down to Kew and add to the poetry of their eyes and under-

standings; but it was neither wise nor well done from the beginning, to have allowed stove and other rare plants to be injured by a constant flow of visitors in and out the whole winter, giving an occasion to that enemy to have two strings to his crossbow. All that is altered now, and "private" on one of these doors does not mean you and I to have a private chat there, but that the place must be kept private for the safety of most valuable plants in winter and till their season's growth is done and ripened, then you can see them and welcome—and they will soon be worth seeing and something more. But my mission was about flowers, and began in the Heath-house, where, also, all the best Epacris were in bloom; where *Rhododendron javanicum* is now in full bloom, and many other fine things, from *Aphelexis* to *Cytisus*, *Correas*, *Pultenaeas*, and others, the host of March decoration. The Heaths in bloom, and the easiest Heaths for us and ours to have for March blooming were *mutabilis*, *pubescens* and *pubescens minor*, *persoluta*, *andromediflora*, *flava*, *triumphans*, *perspicua nana*, *colorans*, *urceolata*, *scabriscula*, *gracilis*, *viride* (vestita sort), *vernix*, *ovata*, *ramentacea*, just going out; *brunnioides*, *lycopodioides*. Also, *Boronias* of sorts, and *microphylla* in fine bloom; *Polygalas*, *distica*; *Chorozema varia*, and others; *Daviesia umbellata*; *Brachycastrum latifolia* and some others, and all in bloom gay as a show day.

No. 10, the grand show-house, and the best greenhouse in all England, where none is better managed, or is more gay in March and April, if not the whole year round. I was wholly surprised, as they say in Suffolk. All the best Hyacinths, early Tulips, and Narcissuses, which were recently before your eyes from Highgate and Pine Apple Place Nurseries, have been forced for this house. Everything that has a sweet leaf to it; all Geraniums that will force, and as many *Cinerarias* as would fill the tables of the Floral Committee with beauty, and their heads with dismay, are got up early for this decoration, and thus a man from London, with THE JOURNAL OF HORTICULTURE in one hand, and a guide-book for Kew in the other, may enjoy more flowers of an afternoon at this season of the year, than the Laird of Tullivolen, or the Duchess of Kippelbringham herself can do down in the provinces, to say nothing of all the *Cyclamens*, *Primula denticulata*, the varieties of *P. chinensis*, with *Dielytras*, *Deutzias*, *Daphne rubras*, *Lilacs* large as life, *Saxifraga ligulata*, with rhubarb-like sized leaves; *Solanum capicastrum*, in bushes with berries golden as the apples of *Hesperides*; *Rhododendron formosum* and *ciliatum*, *Farugium*, *Camellias*, *Roses*, and *Mignonette*. Then, in lesser numbers, were *Arctotis grandiflora*, blooming like a *Gazania patonia* the year round—this is the source of an endless race of Hybrid Perpetual bloomers for in-doors and out; *Zieria macrophylla*, also a perpetual bloomer such as it is. Then most splendid tree Ferns, and the finest specimens of *Gleichenias* anywhere, in the rudest health, and in the largest tubs that must fall to their share. And then the *Acacias*—a sight when they are all in bloom, but this is only a small selection of them. *Acacia celsaifolia* is one of the very best with large leaves, the stem size of a walking-stick, height under 5 feet, pot No. 16, and what more could stamp it for the smallest greenhouse? and some such consideration runs through the whole selection. *Acacia pentadena*, after Drummond; *Acacia grandiflora*, after grandis, *suaveolens*, *Riceana*, Drummond; *myrtifolia*, *sulcata*, *paradoxa*, *grandis*, *pulchella*, *floribunda*, *grandiflora elegans*, *ovata*, *decipiens*, *præmorsa*, *argyrophylla*, for its silvery, silky, shining leaves; *marginata*, after *celsaifolia*. All these are as easy to keep as *Fuchsias*, and bloom, or may be bloomed, from the new year to April in a common greenhouse, and be out of doors from May to October. Some of them as standards, like standard *Roses*, would do admirably in the centre of flower-beds along the side of walks, or where there was no aim at composition-planting of beds.

The climbers in this large house are also well worth the attention of those who may be in want of such high decoration. They begin with the various Passion-Flowers and *Tacsonias*—as *Passiflora corulea*, *racemosa*, *Neumanii*, *Goutierii* after *alata*; *Tacsonia mollissima* and *pinnatifida*. *Tecoma jasminoides* and others; *Kennedyia monophylla*, *rubicunda*, and several others of that family; *Jasminum azoricum*; *Bignonia capreolata*; *Hardenbergia* of sorts, including *digitata* and *ovata alba*; *Mimosa marginata*, or the old *prostrata*; *Rhynchospermum jasminoides*, which can also be forced to come into bloom any time in the winter; *Zichya villosa* and others; *Lyonsia straminea*, looking like a large-leaved *Kennedyia*; *Holboellia latifolia*, related to *Stauntonia*; *Physolabium Sterlingii*, from New Holland, and looking like some *Hardenbergia*, are the principal kinds in that

house. And there is a fine-leaved climber in the large succulent-house called *Cissus quinatus*, which is valued entirely for the healthy looks of its large, green, shining leaves, and its free healthy growth. Here is a Passion-Flower which blooms most part of the year, and is called *hybrida floribunda*—a dark blue flower. Here, also, is *Hardenbergia digitata* in full bloom.

Here the succulents are as gorgeous as they are grotesque. *Littæa gemminiflora* is called *Agave* here. Two kinds of *Dasy-lirion glaucum* and *acrostichum* are two most beautiful plants for setting out in summer on terrace gardens; also *Agave*, or *Littæa striata*, and *gemminiflora* both equally good. *Gemminiflora* flowered at Kew last year, and, four or five years back, at Claremont; but the plants did not die, like some aloes do, after flowering.

In a forcing-house for cuttings and for supplying the show-house, lots of Baron Hugel Geraniums were in bloom as free as on a ribbon-border from the beginning of March. The Baron is the best of all Scarlet Geraniums for winter work; but one, like Tom Thumb, and called Rigby's Queen, is the best spring Scarlet brought to Covent Garden after being forced. The rafters were alive with *Tropeolum Lobbianum*—the best of all the winter bloomers, especially if it receive a few more degrees of heat than a common greenhouse. The plants were in No. 16-pots. *Fuchsias* for summer decoration; also huge specimens of the Unique Geranium—the best in-door plant of the whole family in July, August, and September. Here, also, were shelves of Brilliant variegated Geranium in full bloom; *Calceolaria violacea*—a useful plant for spring use; *Cinerarias*, *Kalmias*, *Heliotropes*, and no end of Flower of the Day, and other bedding beauties; and a long, deep pit of twelve lights, just outside, was full of variegated Geraniums of sorts, still in store-pots for want of room.

My old favourite, *Lapageria rosea*, in the cold, or cool Fern-house, is now in a No. 1 or No. 2-pot, and growing and blooming as freely as ever. The Ferns make a forest in the rest of the house. Next to the propagating department—and there is a good day's work for bookmaking if one could spare the time—one thousand *Stachys lanata* for permanent bedding, all just rooted; *Arabis variegata* the same; Frosted Silver Plants; *Tropeolums*, *Gazanias*, and especially *splendens* in myriads; besides the *Verbenas*, and all the old requisites of that turn and style, with indications of a still higher strain.

What would you say to a hundred yards of *Centaurea candidissima* as the second row on a ribbon-border? Or to a full-length fourth line with a Fern variegated to vie with—what shall I say?—Brilliant in prime mood? The *candidissima* will do certainly when one can afford a ten-pound note for the hundred yards of it; but the variegated Fern is yet at so many half-guineas a-piece according to the size—the smallest size for the smallest piece of gold in circulation; but the plant seeds as free as poppies, and every seedling comes variegated, and will soon be as cheap as *Alma* for the ribbon-borders. It is the old *Pteris cretica* in a new dress from Java. Mr. Smith, who knows them better than any man living, says *cretica* is found in all parts of the world where Ferns grow; but this form of it is found only in Java. It grows 15 inches high, is of a quick, spreading habit, and sturdy growth, makes the finest exhibition plant of all the variegated kinds, is in all the London nurseries, and Mr. Linden is going to send it over for the ribbon-borders for the summer months. I am to prove it, and let you know; and the Floral Committee had a basketful of it from Mr. Veitch, and one plant from Mr. Bull the same day; and there is no mistake about it, for it took a first-rate prize, and no voice or word "to the contrary."

Camellia-house in forcing for wood and early buds for next year. The Sikkim *Rhododendron*-house the same, but kept much cooler and more moist than the *Camellias*. Here, then, is an answer to "AN OLD SUBSCRIBER" or two, who have been wishing to know how to do the Sikkims. The plants there are glorious in their looks and luxuriance. They are kept as cool as *camellias* during the winter; and in the spring, when they move naturally into growth, they are very gently encouraged to grow freely in a moist atmosphere, and little sun, with a rise of a few degrees of heat. The turning-point in their management seems just the same as that for the Nepaul great *Rhododendron* trees—to see that all stimulus is avoided as soon as their growth is finished, lest they start a second growth, and thus hinder them from setting their flower-buds; also to take special notice that the sun does not strike heavily on their new leaves till they are quite ripe—or say to the end of September, or nearly so. When

will anxiously await the sequel to the "Adventures of a Ligurian Queen."—A DEVONSHIRE BEE-KEEPER.

"May 12, 1861.

"MY DEAR SIR,—Your letter of Friday announcing the departure of the Italian queen took me greatly by surprise on Saturday morning. It was a miserable day throughout, very stormy and wet and cold—in fact, here it was blowing a hurricane, which strewed my garden with the leaves and branches of trees, &c. However, I sent off a man on foot six miles to H— after his dinner, and in the meanwhile I myself successfully effected the formation of an artificial swarm in my bee-house without any trouble out of my strongest stock. It was very full of bees, all of which were at home, and in a very impassive state. You will understand that I drove the bees from their upturned box into an empty one of the same size placed over them. A fair-sized swarm ascended after the queen in five minutes, leaving a large population still behind. I never knew bees so quiet; only one attempted to sting, which I accidentally squeezed with my glove. The door of the bee-house being open, the few bees that rose found their way, I hope, to their old home ultimately, although the storm without was scarcely resistible by a bee on the wing. All was over, and the two hives in their respective places by three P.M. The old hive is in its old place, the other one (the swarm) close by on the same shelf, but shut up, as I was anxious to be certain I had got the queen with them. I can at any time close the communication between any of my hives and the open air by simply sliding them, board and all, a little to the right or left of the aperture through which they descend into the sunlight.

"It was not till five o'clock that my man returned from H— with the little casket containing the Italians. On substituting a piece of glass for the unscrewed lid the travellers were discovered hanging in a state of chilled repose from the bit of network which contained the food with which you had supplied them. You have adopted an excellent plan for their travelling comfortably and safely. The queen was the liveliest of them, and an unmistakable Italian; but I thought her small*—smaller in proportion than her subjects, which certainly appear larger than our English bees.

"Acting on Huber's experience, I thought it advisable to wait twenty-four hours before attempting to give the new queen to the hive which had lost its own. It was accordingly about three o'clock, P.M., the following day (yesterday) when I introduced her to her new subjects. Everything had been got ready beforehand, so that when the time came I had nothing to do but to withdraw a zinc slide from the hole at the top of the hive. For I had placed the little casket close to this hole, resting on one of its sides, and open to the hole. Over all was placed an empty box with glass windows, through which I could watch all that was going on.

"I should mention that I had previously drenched the Italians with richly-sugared water (bee food), and poured a quantity of this over the top of the hive, so as to divert the attention of the English bees, and prepare them to receive the new comers kindly. Everything at first succeeded as I could have wished. No irritation was visible on either side. The bees fraternised amicably as the Italians gradually roused from their state of torpor and became warmed by the genial air from the hive below, some of them even descended into the hive. All this, however, took up some time, till, getting impatient to see how the young queen would be received, I stirred them up with a bit of tarred string let down through an aperture in the top of the covering-box. This caused her Italian majesty to disengage herself from her own people, upon which she was immediately laid hold of by one or two English bees, and dragged down into the hive in spite of all resistance on her part; for she was in full strength apparently, and managed to get away from them once at least. And now all was changed. The hitherto peaceable hive was thrown into utter confusion—so much so that I doubt if the bees had yet discovered the loss of their old queen. That they were aware of it now there could be no doubt, as they shortly set up that joyful hum with which you are familiar, after a frantic rush of the bees all over their combs. This hum leads me to hope that the Italian queen may have been ultimately set at liberty and enthroned; but I know nothing of her fate. As to her former subjects a general massacre of them took place immediately after their queen had been seized, and their dead bodies continued to be dragged out of the hive for

* She is really a fine young queen. All queen bees increase very considerably in size after they begin to lay eggs.—A DEVONSHIRE BEE-KEEPER.

an hour or two afterwards. It must have been half-past three o'clock, P.M., when the queen was carried down, but the hive continued in a highly disturbed state all the evening; as was still the case when I inspected it at nine o'clock for the last time. This morning, however, all was tranquil, and the bees have been busily at work carrying in pollen in large quantities, just as if nothing had happened. It only remains for me to wait patiently till I can catch sight of the queen, or see some of the future progeny of the hive.

"I should mention that this hive had several drones in a high state of vigour yesterday; but the bees of all my other hives have got rid generally of their drones this cold week.—Yours truly, B. & W."

HOW TO CURE AND PRESERVE HAMS.

IN answer to "A CONSTANT SUBSCRIBER" relative to the preserving of hams and keeping the "jumpers" from them, I will, with your permission, go before and beyond the question—first by giving directions for cutting up my pig and then salting him.

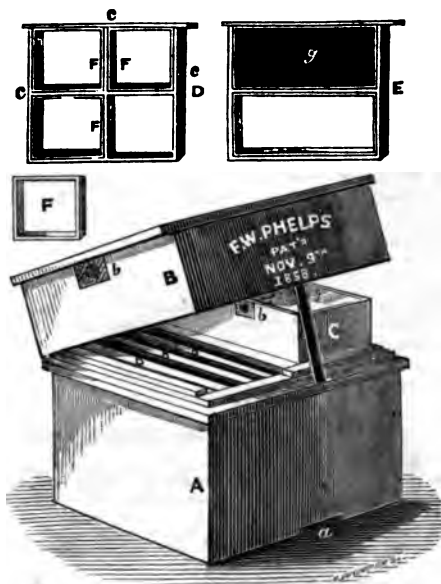
For good bacon, and in defiance of the vermin, I have successfully adopted the method during twenty-seven years. It is a Shropshire plan, generally performed in the surrounding country about Ludlow, and it is one I intend to use to the end of my chapter. Should I require a good seconder to the advice I am about to give, I would appeal to Mr. Beaton, as one not likely to have let slip an opportunity of making himself acquainted with so important a subject when he lived in the neighbourhood and cut down old apple trees there, which I did myself on the other side of the Thames about the same time; though, instead of consigning me to where they would him, the "old women" convened in an opposite and Don Giovanni sense of the word—to drive me out of the country altogether!

But to my pig. Place him on a bench with his back downwards, and, taking as a guide the sticking-place, cut its head off, plying the knife just behind the ears where there is a joint. Then turn the pig on its belly; and with a line chalked and strained, form a straight mark centrally along the backbone the whole length of the pig, and, following the mark with the knife, cut down to the bone. Then turn the pig again on its back, and cut through what little flesh there is on each side the backbone, to facilitate the operation of cutting it out, which is partly or wholly done with a cleaver by separating the ribs on each side. Detach one side or flitch, and lay the side with the backbone on the bench, and remove the backbone. Commence cutting shallow over the shoulder to remove the spareribs and lean meat adhering, remembering to leave a very thin portion of lean upon the fat of the flitch. Cut the ham from the flitch in a decided and rounding manner, and saw off a small piece of the bone that protrudes from its centre. Cut off the "whip,"—a thin piece of fat and rind from the neck in continuation along the belly of the flitch, to give it a neat appearance; odds and ends of which, wherever from, if fat, to become melted with the lard. Cut the feet off a little below the knee-joints, and trim off what appears uneven upon the ham and shoulder. Cleaver the backbone into three or four lengths, and operate on the other flitch as before. Now take the head. Cut from the centre of the jaws, guiding the knife just below and to the back of the ears, to facilitate the separation of the cheeks from the jaws, which is completed with the cleaver, cutting the whole of the upper part of the head from the lower part. Extract the tongue with the knife, and with the back of the cleaver crack through the lower jaw 4 inches from its extremity, fleas it up with a knife, and cast that part of the detached bone to the dogs. Cut the snout away entirely just under the eyes with the edge of the cleaver. Then cleaver through the head midway between the ears; take out the brains, put them in a basin of water, and cleaver the bones away under the ears, to the degree that the finger may be intruded beneath the sockets to force out the eyes preparatory to their extraction; and, as a finale, cut off the ears, and trim from them extraneous matter, hairs, &c., and allow the feet to undergo the same operation. Keep a cloth or two at hand, and allow all the evolutions to be conducted in a clean and orderly manner.

And now specially for "CONSTANT SUBSCRIBER'S" question. Suppose two hams weighing 34 lbs. Lean them on end, hocks uppermost, as soon as the pig is cut up, for three or four hours or so to drain the blood from them. Then with a cloth press firmly from the rind obliquely up the face of each ham, and what blood is perceived to ooze from two veins situated, one

the chair, when the prize lists and regulations for the thirteenth annual Exhibition, to be held on the 2nd, 3rd, 4th, and 5th of December next, were agreed upon, and will be issued immediately. The new lists will, we think, be satisfactory to exhibitors and to the members of the Society generally, some judicious changes having been made, and particularly in the poultry department. The special prizes this year are also more numerous than in any previous list, and cannot fail to insure a spirited competition. Since the last Show the members of the Poultry Committee have undertaken a complete revision of the poultry prize lists, and the changes recommended by these gentlemen were unanimously adopted by their colleagues in the Council. The total amount offered in prizes has been increased, while there are numerous changes in the mode of its distribution, and such as appear well calculated to increase the attractions of the Show. In future also, the principal classes will comprise pens of a cock and two hens or pullets, instead of a cock and three hens or pullets—an alteration which will, no doubt, be satisfactory both to exhibitors and purchasers.

PHELPS' PATENT BEE-HIVE.



THE above cut, with the accompanying description, is furnished us by our correspondent "H. B. G."

Fig. A represents one of E. W. Phelps' bee-hives, patented November 9th, 1858. *a* represents a passage for the bees. It can be made larger or smaller by use of a piece of board or block. Some are made $12\frac{1}{2}$ inches wide, $12\frac{1}{2}$ inches high, and 16 inches long, inside measure, and filled with ten frames, D, E. I prefer the case 14 inches square, with nine frames to winter in, as it is taller.

B represents the cover raised to show the frames D D D, and honey-boxes, C. *b* represents a ventilator. Fig. D represents a honey-frame, and is placed in each end of the hive. c c c represent the outside frame, f f f little frames inside.

The following are some of the advantages claimed over other frame-hives:—

1st. The hive can be made any desirable height, and the comb not warp or break in handling.

2nd. Late swarms many times fill their hives part full, not sufficient to winter them. In this case the empty frame can be taken out (which will be the lower one) and a full one put in its place, filling the hive full of comb, honey, and bees.

3rd. Many times there are from 5 lbs. to 20 lbs. of honey remaining in the hives in the spring. In this case it can be removed in good shape for use or market without disturbing the brood.

4th. Many times there is too much drone-comb in the hive, the frame containing such can be placed at the top of the frame, and when filled with honey be removed, saving the comb; also preventing the rearing of too many drones.

5th. To facilitate early breeding the brood-comb can be raised at the top, as in cut E, letter g, while the bees are hovering on the comb below or making new, preventing the chilly air from destroying the brood.

6th. If bees are wintered in a proper bee-house, they many times do not empty comb enough to raise brood in. In this case remove the best pieces, and the bees will fill them with brood-comb.

7th. The bees will leave a winter's passage at the bottom of the top frame, which is necessary in large sheets. Many using the single frame even go to the trouble of taking each frame out and cutting it through.

8th. In case of the loss of a queen, the frame or section containing the queen cell or eggs can be removed, without cutting or marring the rest of the comb.

9th. Should the moth destroy a part of the sheet the portions can be removed, the balance not disturbed, not even with the knife.

10th. The bottom is not made fast. All the filth can be removed that gathers there without disturbing the bees or frames.—(*Prairie Farmer*.)

[The above is an American's ingenious mode of evading Langstroth's Patent.]

THE WOODBURY COMB-BAR.

ON the 15th of June I hived a fine natural swarm of Ligurian bees in a frame-hive, fitted with the improved comb-bars, but entirely destitute of guide-comb. Nine days later I examined the combs, and found the foundations laid with the utmost exactness, upon the centre of each bar. I need hardly say that this proof of the complete success of the new comb-bar was highly satisfactory to—A DEVONSHIRE BEE-KEEPER.

BEE FOOD.

MUCH has been written on the subject of a substitute for the natural food of bees, and, in particular, ingenuity was often taxed during the last disastrous autumn and early spring, to place within their reach the means of sustaining life and health. At the close of the working-season there is, doubtless, nothing so good as honey; but even this was not everywhere obtainable, and is often expensive. A friend of mine in a southern county was in this dilemma, when his attention was directed to an unusual activity amongst his bees, and found that it arose in consequence of the presence, in an adjoining grocer's yard, of an open cask of molasses, or treacle, which the invaders were appropriating to their own use with much avidity. The hint was not thrown away, and a mixture was soon concocted of treacle, flavoured with a fourth or fifth part of honey diluted with water, and a little dash of rum, boiled together, I believe, for a short time. With this cheap compound, the bees were healthily sustained through a trying season, and swarmed earlier than usual. Indeed, the instances were rare of any stocks remaining in existence in the neighbourhood. I have heard objections, real and imaginary, raised against the use of treacle; but I submit these remarks for the consideration of bee-keepers.—AN OLD APIARIAN.

RHUBARB WINE.

SEEKING that the makers of this wine put themselves to a deal of unnecessary trouble, I determined last season to give a hint on the way I do it if I was spared till another season, and it is simply this:—Instead of pounding and thumping with a mallet, or any other instrument, if the Rhubarb is clean I do nothing more than cut the leaf off, then the part that is underground; then cut it into any convenient length, say cut the stick in two, if the vessel you are going to put it in will take it that length; then slit it down in slices, say as thick as the number of THE COTTAGE GARDENER, or take hold of one end of the whole stick and shave it off in shavings as though you were shaving a deal stick to make spills, only thicker, and, of course the breadth of the stick of Rhubarb. I let it stand nine days in the water; then I take up the Rhubarb with my two hands, give it a squeeze as I pull each lot out. I have a coarse cloth over another vessel, I place the Rhubarb on that to drain. When it has run most of the juice out I take up the cloth and give it a twist or two, and

a few good squeezes and the work is done. Now, without any pounding or using a press, you will have all the virtue out of the Rhubarb, and the wine will fine much sooner and better than with all that extra trouble, and I am sure quite as strong, if not stronger. I do not say anything about any of the other processes of the making of the wine, as that is, perhaps, better understood than I understand it myself; but I may say this, I put no brandy or other spirits in my wine—nothing but sugar and a little ginger, and a lemon or two. I merely write to try to save some of my fellow subscribers from some of their labour; but I do not expect all will fall in with my way at once, because I have a good proof that people are not easily turned out of their old way; for although I beat all my neighbours in my wine, and they acknowledge mine the best, still I have not pounded it out of them to leave off pounding the Rhubarb yet, or to leave off putting brandy in it; they say it is impossible to get the strength out of it without pounding and pressing. But let them do it my way, and then pound and press after, and see how much strength they will get out. If you think this, or any part of it worth a place in *THE JOURNAL OF HORTICULTURE*, well; if not, cast it away.—WORCESTER.

VARIETIES.

NAMES OF PLANTS.—Some of our readers have at times experienced difficulty in mastering and retaining the seemingly crabbed names employed by botanists to designate plants, and it may truly be asserted that some of them are, indeed, rough, unsouth, and harsher than our

"Northern whistling, grunting guttural,
Which we're obliged to him and spit and sputter all."

Such names as Schleicheria, Zauchneria, Eschscholtzia, Scheuchzeria, &c., in my humble opinion, should not have been adopted. Not that they are difficult to retain in the memory, but because they are harsh and do not conform to the genius of the Greek and Latin languages, from which scientific terms are generally derived. Moreover, a name should convey a meaning having some bearing upon the subject, descriptive of its qualities, thus becoming an aid to the memory, and readily recalled by association. Exception may be made in favour of naming in honour of those who have advanced the science of botany by explorations, special study, &c.; but in this case those only who have distinguished themselves should be thus commemorated, and harsh, uncouth names rejected. Linnaeus adopted this custom, and honoured several of his patrons and pupils after this fashion. Thus the Celsia was named after Celsius, one of his earliest benefactors. The Kalmia, abounding in our woods, and so well known in English gardens, but a stranger to our own, commemorated his friendship for Professor Kalm, his pupil and fellow labourer, and who first presented this beautiful plant to his teacher. Linnaeus well observes in his "Critica Botanica," concerning this practice of bestowing celebrated names upon genera of plants, that a "proper connection should be observed between the habits and appearance of the plant and the name from which it has its derivation." The Andromeda, a beautiful little gem, much resembling the Heath of England, and belonging to the order Ericaceæ, and one of the best representatives of the Heath in America, may be cited in illustration. The buds are of a blood-red hue before they expand, but when fully blown the corolla is of a flesh colour. During his Lapland tour, Linnaeus found this plant in abundance adorning the marshy ground with its delicate blossoms; and as he admired its beauties, his imaginative mind was struck by a fancied resemblance between the appearance and circumstances of this plant and the story of Andromeda as related by the Greek poets. "A maiden of exquisite beauty chained to a rock amid the sea, and exposed to monsters and venomous serpents. This lovely little lower," he said, "is her vegetable prototype. Scarcely any painter could so happily imitate the beauty of a fine female complexion, still less could any artificial colour upon the face bear comparison with this lovely bloom. I find it always fixed upon some turfy hillock amid the swamps, and its roots bathed by their waters. In these marshy and solitary places toads and venomous reptiles abound. And just as in the case of Andromeda, Perseus comes to deliver her from her dangers by chasing away her foes; so does the summer, like another Perseus, arrive, and, drying up the waters that inundate the plant, chase away all her aquatic enemies, and then she carries her head (the arista), which before had been of pensively a wet and disagree-

her beauties to the sun." Pleased with the idea, he chose for this flower, which is the type of a new genus in the system he was arranging, the name Andromeda. Other illustrations of the application of this canon of Linnaeus may be found in the Scheuchzeria, a grassy alpine plant, named from the two Scheuchzers, one of whom excelled in the knowledge of alpine plants, and the other in that of grasses. Also, in the Hernandia, an American plant, named after Hernandez, a naturalist sent out to Mexico by Philip II., of Spain, and said to have been given to the plant, which has large leaves and small flowers, in allusion to the great opportunities afforded to the naturalist and the little use he made of them. And, again, the Buffonia received its name in honour of the celebrated Count de Buffon, while one of its species was called the Slender-leaved Buffonia, by Linnaeus, on account of the slender pretensions to botanical science which that naturalist possessed! Linnaeus selected, as an emblem of himself, the Linnaea borealis (so named by Gronovius), which he describes as "a little northern plant, flowering early, depressed, abject, and long overlooked; and then traces a resemblance between this flower and his own early lot. Like it, unfolding in a remote northern region, without the gifts of fortune or the means of cultivating his natural powers, he was long unknown and overlooked. Indigent and obscure, he pursued in secret his scientific researches, exploring the recesses of Nature, tracking her footsteps to her remotest retreats. Mountain and glen, forest and moor, alike yielded up their treasures to the ardent inquirer, who came forth, after a season, enriched by the spoils he had collected, and which, arranged in a new and beautiful order, he presented to the surprise and delight of kindred minds in every region. Then, indeed, his resemblance to the humble flower of his choice ceased, and men of science in every civilised country pressed forward to avail themselves of his discoveries and share in his pursuits, and the clouds that had gathered around his youth were dissipated, while for the last forty years of his life he saw himself surrounded by the honours and emoluments his country and his king had bestowed upon him, and enjoyed the chosen delights of his heart amid a host of pupils who honoured and loved him as their friend, the instructor and then benefactor."—(L. Haddonfeld, in *American Gardener's Monthly*.)

OUR LETTER BOX.

BANTAM LAYING TWO EGGS (Fertile).—It is quite certain that Cochinchina hens occasionally lay two eggs in one day; therefore, we know of no reason why a Bantam hen should not do the same—therefore, your man, probably, is correct.

WHITE SPANISH FOWLS (Instow).—We totally differ from you when you say that these ought to have white faces. The red face looks far better contrasting with their plumage. They are called White Spanish, but they more properly should be called White Minorcas.

SPANISH COCK WITH DISEASED EYES (W. H. M.).—Give him castor oil, a table-spoon at a time, and repeated as often as it seems necessary, at intervals of twenty-four hours. Rub the discoloured spots with compound sulphur ointment. You do not say whether he appears to suffer in health, nor whether the closing of the eye is the result of swelling of the white face, or its gradual and healthy increase.

PIGEONS LAYING BUT NOT SITTING.—"C. B. W." does not state how many Pigeons have laid the twelve eggs he speaks of, nor does he give us any clue to guess the cause. Are the Pigeons properly paired? or are there some odd hens? When short of cocks, two hens will, not unfrequently, pair, build, and lay two eggs each; if this were continued three times it would amount to the dozen eggs. In that case, the obvious remedy would be to provide two cocks for these unhappy hens.—B. P. B.

RABBITS (J. F.).—Putting the doe to the buck, will not prevent her suckling her young ones.

GOLD FISH (Dubious).—Draw off the water almost entirely every day by means of a syphon. A piece of Indian-rubber tube makes the best of syphons for emptying a glass globe, it is so flexible and manageable. River water should be employed. We keep a few aquatic plants in our aquarium, and give the fish a very few small pieces of vermicelli daily. There should be some clean pebbles and sand at the bottom of the globe for the fish to scour against.

LONDON MARKETS.—JULY 1. POULTRY.

We remain much as we were last week. The supply is good, but not large, and the demand is quite equal to the average of late years. We may soon look for a fall in prices, and this will affect our returns.

Each	Each—s. d.	s. d.
Large Fowls.....	0 10	0 0
Smaller Fowls.....	2 6	0 0
Chickens.....	0 7	0 0
Ducklings.....	1 0	1 5
Guinea Fowls.....	0 0	0 0
Leverets.....	2 6	0 0
Pigeons.....	0 7	0 0
Rabbits.....	1 4	1 5

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JULY 9—15, 1861.	WEATHER NEAR LONDON IN 1860.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
9	Tu	Helianthus.	30.141—29.983	deg. deg.	E.	—	m. h. 56 af 3	m. h. 14 af 8	m. h. 58 a 8	1	m. a. 4 52	190
10	W	Campanula.	30.039—29.961	68—49	E.	—	57 3	13 8	13 9	2	5 1	191
11	Th	Veronica.	29.985—29.930	73—44	E.	—	58 3	13 8	12 9	3	5 9	192
12	F	Anchusa.	29.972—29.883	74—41	E.	—	59 3	12 8	12 9	4	5 17	193
13	S	Centaurea.	29.961—29.788	75—50	N.E.	—	iv	11 8	7 10	5	5 25	194
14	Sun	7 SUNDAY AFTER TRINITY.	29.800—29.708	75—48	S.W.	—	1 4	10 8	26 10	6	5 31	195
15	M	Pentstemon.	29.840—29.791	71—47	S.W.	0.1	2 4	9 8	50 10	7	5 38	196

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 75.2° and 51.2° respectively. The greatest heat, 93°, occurred on the 14th in 1847; and the lowest cold, 37°, on the 9th in 1856. During the period 141 days were fine, and on 30 rain fell.

ARRANGING FLOWERS IN BOUQUETS AND VASES.

(Continued from page 252.)

WREATHS, &c., FOR DECORATIONS.



HERE are sometimes great difficulties in making the wreaths which are now so often used for Christmas decorations. They are often made in ways that take up a great length of time; whilst in all these arrangements most frequently the simplest sort and quickest done are often the most graceful.

Some take strips of calico and sow the foliage on to them; others prepare long stiff cords, and bind it down upon them; and a third party, who, I think, do best, take a succession of small green branches, and bind them continuously together without any other support than that afforded by the overlapping stems.

In proceeding thus, the first piece of green used for commencing the wreath should have a longish stem, and all the pieces should have a few inches left of bare stem for binding over.

All the pieces should be trimmed into a proper size for the thickness of the wreath. For twining round pillars the wreaths can hardly be made too large; and when there is not material sufficient to make them really handsome (and they do take an enormous quantity), I think it looks much better to have one immense drooping wreath of Ivy and spreading Fir placed round the top or capital of each pillar, the entwining of the shaft meanwhile being left quite unattempted.

A very pretty way of decorating any large massive piece of stonework—a font, for instance, if in a church, or a statue, or a doorway, or for deeply-cut niches, as for a window-frame, is to take a few flat fan-shaped branches; and without any attempt at fastening, to lay them down in the manner of a wreath round the base of the pedestal, or in the angle of the recess, or along the front of a sculptured niche. In arranging the decorations of a hall or gallery filled with statuary, this would be found a most rapid and effective plan.

For all these purposes variegated foliage is not generally much to be recommended; and when it is used it should never be mixed with any of a darker kind. The only way in which I think it looks really well is in a massive wreath hung in the strongest light; and in a place where it will either produce a harmonious effect of colour, or where it will be near enough to the eye to be distinctly recognised as what it really is. It should never be used on a background of green, whether light or dark—unless, indeed, the foliage is very nearly white. Even then, however, dark green is very cold and heavy for it to rest against.

No. 15.—VOL. I., NEW SERIES.

From some effects of colour I have observed lately out of doors, I fancy that a dark bluish-purple would be a rather good contrast; but this does not sound very natural, and I cannot answer for its success in practice.

For the large green wreaths I should recommend the use of a great quantity of Fir branches. Some Box might be used, but I should keep it all for the smaller wreaths where these are required also; then Portugal Laurel does pretty well, Ivy the best of all, and common Laurel tolerably. Holly looks very bright and glossy, but it must have no berries; and Laurustinus would be very useful sometimes if it were not for its too numerous flowers, which in a very large-scale wreath are not admissible.

For picture-frames and looking-glasses nothing looks more beautiful than a wreath of Arbutus adorned with its scarlet berries; Laurustinus and Snowberries being thickly intermixed, and the whole crowned by a little bouquet of the various mingled greens. Fern leaves are most useful for such central bouquets; and on a larger scale in some cases, as in harvest time, a triumphal arch crowned with handfuls of ears of corn, arranged one up and one down, and tied together loosely in the middle, is very appropriate and very pretty. I always wonder very much that in the apple counties the beautiful bright red fruit is not more made use of for open-air decorations. I never once remember seeing it, and yet how very beautiful the glowing crimson fruit looks clustering amongst the leaves.

In the apple counties I know it used to be “not the thing” to have apples brought to table; but this rule, I think, is being properly broken through now that prize fruit is thought so much of; so perhaps in this case also it will become more sought for—there may be a chance of some of the bright colouring which those peculiarly bright-faced little crab-like Apples would lend to an arch in autumn.

For very small wreaths for following the lines in delicately carved woodwork, or for the tracery of an open device in wire, the little pieces of Box are the very best of any, where, as is usually the case in England, a sufficiency of Myrtle is not to be obtained. These little sprays are far better when of a naturally compact and branchy shape. They cannot be, indeed, too neat, and can scarcely be too short; as the shorter each piece is, the closer and neater generally is the wreath itself.

In all these arrangements we are supposing no flowers to be used, the green alone forming the ornament.

When, however, flowers are added I have found it to answer best to put them in after the wreaths are fastened in their places. Often it is easy to slip in the stalks; otherwise, when mounted on wood or wire, it will pierce the mass of foliage, and at other times a little wire may be necessary to attach the flowers easily. The flowers should be carefully made to follow in the fall of their foliage the direction of the leaves, although it seems useless to strive against the one great objection to making them up together—that of the time the wreaths take making, and the rough treatment which they have

No. 667.—VOL. XXVI., OLD SERIES.

to suffer. The flowers being unattached, can very easily be removed and replaced if they fade too quickly, and I am to say how long I have known the green itself continue to look well, fully extending over all the season of the Christmas gaieties.

DESIGN FOR WREATH.

I can hardly decide what would do best for this design. I think that a cipher surrounded with a wreath perhaps is the best, as it includes both green and coloured work.

Say, then, that the device is to be a cipher or a motto on a shield surrounded by a wreath.

The letters should first be traced upon the stiff piece of canvass stretched on a hoop. Card would do, but canvass is far better. The very simplest-shaped old English letters are the best to use; and after they are drawn in outline upon the canvass a strong solution of gum should be laid all over it, omitting with great exactness the spaces of these said letters. The whole ground should then be closely covered with Snowberries or some other white berry, or with white everlastings, or, in fact, with anything in the vegetable world that can be made look really white and pretty while retaining a flat surface. If flowers are used, the gum will perhaps be exchanged for the use of needle and thread.

Or, if the letters can be provided for in flowers, the ground may be all of Holly berries, which, though I name it last, I the most advise; but Christmas time is a difficult one to provide for, and I want this device to serve for use then as well as in the summer time, when scarlet and white Verbenas are waiting to fill the canvass.

The ground being prepared, the letters have to be filled up very closely and fully; and it is sometimes even well with a pair of scissors to clip off any leaf or petal which creeps beyond its bounds. Scarlet looks well for the letters, but nothing better than golden words on white.

For the frame a prettily shaped piece of green should be laid either way in the hand, and bound together across with some feathery pieces rising from between. The wreath should then go on each way; and I may here mention that acorns and Oak leaves in autumn, and Laurel leaves at other seasons, make a beautiful frame-wreath even quite alone, especially when the scene and the devices are of a warlike kind. Otherwise a beautiful spray of Arbutus and Snowberry, with Laurustinus at the top and a sort of knot of the same underneath the frame, would best combine the two separate lengths; each drooping downwards if of a creeping kind of foliage, or pointing upwards if of the Laurel class, and being made tolerably even as to their size.—E.

(To be continued.)

FERTILISATION OF WHEAT—THE HYDROMETRIC BELT.

WHEN I said that the explanation of the process of natural fertilisation of the Wheat plant by "H. C. K., — Rectory, Herefordshire," was just what I deserved, I did not mean to acknowledge that I, or any one, deserved to be laughed at, as he surmised, for an error in the explanation of a natural fact, and I am quite sure that no one will laugh at him for falling into a very great mistake. He, too, was like the farmers, too late in his examination of the crop of this year; and I shall hold him in my grasp as firm as the basis of botany for the space of twelve months, as the first of my pupils in the corn-trade crossing; and any in June next, if he will pay the expenses, I shall engage to go down to the borders of Herefordshire—that is, to the Malvern Wells, and if I shall not be able to show him the pollen of the Wheat, which, from his letter, I am quite sure he has not yet seen; also, if I am not able to show him the anthers full of pollen and split, and empty of all trace of pollen, when they come from their possible position, which is the position of the anthers in the flower, I will give him a good scolding.

How I make out from his letter that he was behind time is thus accounted for. "When the ear is rising out of the sheath the whole of the anthers are green and immature," and "when it (the ear) is completely clear of the sheath the blossoming process commences at the upper part of the ear." That is just what I said was the Royal Agricultural Society's shortcoming. They were three weeks or a month behind Nature, and this gentleman is not one whit before them in his knowledge of the natural crossing of the Wheat. It is curious to note that in the *Leschenaultia* the anthers and stamens, after discharging the pollen, dry up and wither in the centre of the flower when it is yet in the condition of a very small flower-bud; while in this genus, or at least the anthers of the Wheat "are green and immature," according to my first pupil, ten days after the pollen is shed. I recollect it was in 1842 or 1843 that I first probed Nature for this answer, and I fell into the very same kind of error as "H. C. K." has most certainly committed. Yet there were appearances for which I could not account so clearly as he has done, for he concluded, without observing the fact, that the "husk opens for a brief interval, probably for a few minutes only, when the anthers are mature." The appearances I allude to tell me the husk never opens at all for that purpose. The opening or the closing of the husk, supposing it did open and shut every day for a month, has no more to do with the process, or progress of the pollen than my pen has. The husk shields it from the weather while it is young, and my pen describes the conditions and the mode under which the grain receives its vitality inside the husk. "H. C. K." attempted to make out these conditions and failed, as surely as ever a man failed in this world in any one thing. And I reassert that the Royal Agricultural Society and the farmers are three weeks behind Nature in their time of the flowering of Wheat, and I do hereby challenge all the botanical professors in the country to prove that I am a single shade wrong about the fertilising of the Wheat.

But the great error in my second letter in answer to Mr. Darwin I put in conscientiously, and on purpose to see if there is one man in ten thousand who pretend a great deal on such things without ever looking at them. I mean this for us gardeners only. And, therefore, any one except a gardener who will detect the error will not be entitled to the prize, the hydrometric belt, on which I mean to throw some practical light, and which botanists do not think scientific enough to study, and tell us the reasons for the freaks of flowers in their eccentricities before and after and during their honeymoons. But the hydrometric belt has a wonderful deal more to do with them than most men think of. Suppose a straight jacket to be hydrometric—that is, be like a clothes-line, and "give and take" to the weather, slacken down to a festoon in dry weather, and when it rains tighten up to a straight line. And suppose one in a jacket of that sort, and it to get wet, the consequences would be a tightness about the chest very disagreeable. Now, the under covering of composite flowers, as a Daisy, is like a tight jacket all round the bottom, and is called an involucre; the same thing as the calyx in other flowers, or the "impalement" of old botanists. The impalement is the best name for my purpose. Well, when a composite flower shuts of an evening, as *Gazania splendens* does, though not so much so as other *Gazanias*, it is not the flower's fault, but the misfortune in being clothed in an impalement, or a straight jacket, which gives and takes with the changes of the weather, and always with the change from day to dewy eve. It is not the flower of the Daisy of itself that shuts up, it is merely pressed by the straight jacket, so much that it must compress itself. Now, suppose one of the present fashion of loose jackets, which natural philosophy so much admires in ladies' fashions, to be turned suddenly by the hydrostatic principle to a straight jacket, and to be so tight round one as to cause pain, how would you alter it on the instant, say to save life—no buttons, no loops, or hooks and eyes, recollect, and the body is suffering? The way I would do would be to get the point of the knife in under the edge of the jacket, and slash it up to the armpits first, and then along the spine at the back, and then front the same, and it would soon be as comfortable as the present fashion of loose jackets. And if you will do the same for a favourite composite flower—slash the jacket, the involucre, and that flower will never shut again. My *Gazania splendens* are open day and night, I slash their jackets, and they get so loose and so comfortable-like that they pay me with their smiles as well as husk as at dawn of day, and any time between I may noose a visit there. But it is expensive work, slashing five hundred plants a year in the garden, and taking up a good

deal of some one's time; or even if there be but one bed of it about a place, and that bed an ordinary size—say a circle 6 feet in diameter, all filled with *Gazania splendens*, and eighty flowers opened the first day, how long would it take a boy to slash all their jackets for them? and what is his day's pay? Make out that by figuring. And for the rest of the season say there are from ten to fifteen fresh flowers open every morning and evening, one of them to be slashed daily as they come, how much would it come to from the middle of May to the second week in October? You make the calculation, and let us know the expense of keeping such a bed with open flowers, dull or sunshine, all night as well as in sunny weather, and it rests for me to guarantee the good it will do, and that it will not fail; also that a bed with slashed involucre looks to my eye a finer sight than a plain bed.

But like great discoveries in cross-breeding, this was the result of a process gone through for a very different purpose. I had been foiled in attempts to pollenise the different species; the flowers closed in the afternoon, and the next relay of pistils took up a fresh set of self pollen before the strange pollen could take effect, and I was baffled, and hit on keeping the flowers open from first to last in order to be able to arrest the natural process, and give better scope for the artificial system; and behold just what you have been told. The treatment under which these *Gazanias* were placed in order to get them to seed is the same as that which I suggested last winter—that is, similar to having the plants planted out on a very dry border, but kept moist below for the roots, inside and close to the front of an orchard-house where abundance of air was admitted day and night. The way I keep it powdery dry on the surface is this. When I water the border I give it a thorough good soaking early in the day, and in the afternoon I scrape off a little of the damp surface, and mulch it with an inch deep of dry-as-dust cocoa-nut refuse, like unto brown sawdust, and two such waterings were sufficient during the month of June. The only way to insure a cross in this kind of composite flower is to take the first series of florets round the outsides of the disk or centre. In *Gazania*, two rows of the outside florets come up the first day—that is, the styles of the florets push up out of the tubes carrying up the pollen with them, as all styles of all composites do; but the styles are not then ripe to receive the pollen, but on the second day they are so, and then the top of the style is split into two arms or horns, the real stigma. Well, the first morning nothing is more easy than to blow off all the pollen from the first risers, leaving the pistils bare as pins and as much pointed. Early the next day, or that afternoon, some more styles push up, also with pollen on their sides, below the summit, and these and all the styles in the centre should be most carefully cut off lest the pollen on them should dust on the horns of the first set. These horns or stigmas are to be dusted by the pollen of another kind, and the process is to take a whole flower when its centre styles are fresh up, and touch the stigmas all round with the styles of the strange flower, and the pollen will stick to the stigmas in a way not to be blown off as at first.

Now, here is a pretty experiment by which one can learn more than the value of the best seedling; and if I could enrol a certain number of volunteers to engage it, I would engage myself to give them practice, which requires just as much correctness of eye as shooting at a bull's-eye 800 yards off. But recollect in our damp climate South African composites must not be allowed to close of an evening to mash the pollen with the dew—split up their thick, scaly envelopes into four or six divisions and then you are safe with them. A different process will be necessary for ligulate florets in this order. This is merely the best and surest way with *Aster* or *Daisy*-like flowers which have the centre in simple tubes, *alias* florets. D. BEATON.

SHARPENING MOWING MACHINES.

I was glad to see Mr. Appleby's observations on mowing machines in your *Journal* lately, and it is to be hoped that they may draw forth some more hints on the same subject from persons as well qualified to give instructions as himself. Not that I think there is so much needed in the way of sharpening the cutters of these machines as some appear to think, but that few persons know how to use them in the most efficient manner.

I myself have watched very many of these machines (by various makers, by hand and horse power) at work, and I have rarely found one that was doing its work as it ought to do, and as it might do: so perhaps it may be of some service to amateurs and

others if I give some simple directions as to the management of them.

When the machine is on the ground and ready to commence work, 1. First see that the cutters are close down upon the flat blade underneath; their being at too great a distance from it is the most ordinary cause of the machine not doing its work properly; they should be so close as to grate very slightly upon it, without impeding their free motion; they will then cut the grass clean, instead of pugging it, and the labour will be all the less. The screws which raise and lower the cutters are generally very simple and easy to understand.

2. Next take care that the cutters are the proper height off the ground; if they are set too high, the work will not be good; if too low, the action will be laborious. If Green's machine is used the chain will probably slip the cogs, which it ought never to do; his machine cannot be set too low, provided there is no slip. With other machines the correct height is easily ascertained by trial.

3. Then oil all the bearings carefully, the axis of the cutters especially; then of all the wheels and the roller, as well as that part where the gear-rods bear on the axis of the roller. See that all these working parts are clear of bits of grass, which are very apt to insinuate themselves, and so create great friction.

N.B.—I have seen one of Samuelson's machines actually without any means provided for oiling the axis of the cutters.

I need scarcely say, beware of stones; I find, however, they are comparatively harmless if the machine is worked rather slowly.

If the grass is very long it may still be easily cut by raising the cutter sufficiently. If it has been left uncut as much as ten days, and is at all long, it will be advisable to turn back, and go over the same strip again, and so on, backwards and forwards. But I find it to be far the best plan not to allow the grass to go more than a few days—say four or five, according to the weather; and then, by passing the machine once over it, the best effect is produced with a minimum of labour.

With regard to sharpening the cutters, I use one of Green's make, so that I am able to speak only of that. I do not know whether his steel is better than that of other makers, but of this I can speak positively—that it will do its work most perfectly for two years, with twelve hours a-week work, and I believe would do it equally well for many more without sharpening at all. I have seen and used all the various machines at different times, and I have come to the conclusion that Green's has many advantages over all others—one prominent one is its lightness. An eighteen-inch by him, when in proper trim, can be worked over any grass by one man with ease, if the ground is not very hilly; whereas I have found a fourteen-inch by other makers too heavy to be worked long by one man without distress.

In conclusion, put a good machine into the hands of a working gardener, and teach him thoroughly how to adjust it; and, after a week or two's work, I shall be much surprised if he wishes to go back to his old scythe. I am in the habit of using my machine (eighteen-inch) a good deal myself in all weathers for the sake of the exercise, and I find that for two hours at a stretch I can do single-hand the work of five or six men with the scythe and besom.—H. C. K., — *Rectory, Hereford*.

TRAINING MELONS.

I HAVE read with attention Mr. Fish's remarks on Melon culture last month, and have followed his directions in the training of my plants. I should be glad if he would enlighten me on the following point: My fruit is now set nicely, how must I proceed with the after-training of the plants? I have three secondary shoots to each, and some tertiary. I allow one fruit to each secondary. All the eyes of the secondary shoots are cut out except those which have given me four tertiary to each. Now, must I let them grow as they please, or are they to be allowed to spread no further?—C. H.

[By what you state, if we understand aright, you have three fruit to each plant. The tertiary shoots, therefore, on which there is no fruit will be of no farther use at present than keeping up a good, vigorous root action in the plant. These, therefore, may be stopped as they grow by nipping out the points, or even removing a small one, when room cannot be found for it. The more good foliage there is exposed to the sun the better will the fruit be. A great thicket of foliage is undesirable, because much

person to be relied on, assured me that he had looked over the Apple trees in upwards of twenty gardens and all were free from aphides. He is of opinion that the severe frost which took place during Christmas week entirely destroyed them.

Has a similar occurrence happened elsewhere? and if so, what is considered to be the cause?—S.

BEDDING-OUT AT THE CRYSTAL PALACE IN 1861.

(Concluded from page 253.)

THE next place in order is the centre, round the great basin, above the water temples, and up each side to the grand terrace itself: but let us take it from the top, where a Deodar stands on each side in plain circles—that is, without anything but the trees. Here, in a straight row on each side, are seven oblong beds and seven circular beds; each circle with a Humea in the centre, Ageratum round it, Flower of the Day round that, then a ring of Crystal Palace Scarlet and an edge of blue Lobelia. The seven beds are the same way on each side. The oblongs are all as one on the ribbon race. The centre line all the way down is of the purplish-pink Nosegay, or Fothergillii—the longest line of one kind of Nosegay in England, perhaps; a row of Cerise Unique on each side, the two making a combined band of rich rosy pink; then a contrast in a row of Purple King on each side of the centre; then Tropæolum elegans on each side, and an edging of Sweet Alyssum. Here Purple King, in contrast to what is on each side of it, cuts off the orange of elegans from the rose of the centre; and the white Alyssum edging all round contrasts finely with the blue edging of the circles. Just look to that when you are on the spot; there is more in it than appears on the surface. At the bottom of that run, and round to the Rhododendron-bed next the walk, is one oblong bed 86 feet long, and, of course, 12 feet in width, that being the proportions in grand places. That large bed has its fellow on the other side like the rest of them. They have four rows of Tropæolum elegans in the centre, two rows of Purple King on each side of elegans, and Mangles' for the outside. The curve round the grand basin has three oblong beds, each 30 feet long, and three circles 9 feet through. The three oblongs have three rows of Ageratum down the centre, two rows of Tropæolum elegans on each side, and a row of a variegated Geranium like Alma all round. The middle circle of the three is a little different from the one on each side of it—thus: Young plants of Cottage Maid are in the centres of the three circles; the middle circle has Brilliant round Cottage Maid; and the two end circles Alma instead of Brilliant. All three are in blue edging.

Now, from the grand central basin off to the right or left to the grand terrace, and you see the Japan Lilies among the Azaleas and hardy Heaths, along with Pinks, Cloves, Picotees, Anne Boleyn Pinks, Poppies, and Foxgloves in the distance, with all sorts of Larkspurs, and some other showy plants behind the Lilies from Japan; and these Lilies are now clearly proved to be as hardy as the common white Lily of the lodge-gate gardens of England, for not a fibre of their roots was touched by that severe winter, and now they are rising stronger than in former years, as all bulbs do while they are in progress to full properties.

On the grand terrace the bottom rows of oblong beds are in contrast ribbon rows of three colours, the Crystal Palace Scarlet Geranium taking the two centre rows, then two rows of Christina on each side of the centre, and two rows of Purple King on each outside of Christina, and all the circles are alternately with Gazania splendens and Tropæolum elegans, and both edged with Flower of the Day—a grand sight. The half circle of the Araucarias in two divisions made by the main centre walk has seven Araucarias and seven pedestal-beds in each division, and each half a reflect on the other, with two Deodars on each side of the central walk. All the Araucaria-beds and these Deodar-beds are in blue Lobelia on the slope of the mound-beds for the trees, with a line of Cerasium at the top and bottom of the slope, leaving a clear space of about 18 inches level on the top for the trees. The seven pedestal-beds in one half of the half circle will tell those in the other half, and here they are—the first pedestal-bed beginning at the bottom of the centre walk between the Deodars is thus planted: five rows of Cottage Maid, and one outside of Flower of the Day; the second is Ignæscens superba, with Golden Chain outside edging, and Flower of the

Day inside ditto; third bed Trentham Rose Geranium in five rows edged with Lady Plymouth; then turning round the corner to the Araucaria run, the fourth pedestal-bed is five rows of Cottage Maid edged with Tropæolum elegans; the fifth with five rows of Crystal Palace Scarlet Geranium edged by Flower of the Day; the sixth in five rows of Cottage Maid edged with Tropæolum elegans again; the seventh, Trentham Rose edged with Flower of the Day; eighth, Cottage Maid and elegans again; and the ninth and last, Crystal Palace Scarlet and Flower of the Day. The opposite nine beds the same.

Then the upper half circle opposite the Araucarias, in two halves, has seven oblong beds with three vases and three statues between them. Then beginning at the bottom bed, west end, we have a bed of purple Petunias in five rows, and a row of Flower of the Day, and then blue Lobelia, close planting thus—second bed Tropæolum elegans edged with Golden Chain and blue Lobelia, a row of each; third bed, six rows of Calceolaria integrifolia floribunda, or C. "floribunda," as they say, edged with Flower of the Day and blue Lobelia in two lines; fourth, or middle or key-bed, Unique Geranium edged with Golden Chain and blue Lobelia; fifth bed, to match the colour of third bed, its match from the key-bed, Triomphe de Hyris Tropæolum five rows, Countess of Warwick round, and Lobelia outside; sixth to match No. 2, five rows of Crystal Palace Scarlet Geranium, Golden Chain, and blue Lobelia, a row of each; and seventh bed, Shrubland Rose Petunia, with Countess of Warwick round it, and blue Lobelia outside. The corresponding seven beds beyond the centre walk same as those, of course. But how my friend, fresh from Athol Brose, could have been puzzled at this simple arrangement is a mystery from beyond the hills.

Now, the chain pattern on each side of the centre is even more simple still. Three rows of Calceolaria floribunda run through the centre of all the beds, two rows of Crystal Palace Scarlet Geranium on each side of the Calceolaria, and the edging all round with the narrow links between and connecting the beds are all in variegated Alyssum. Aristocratic enough, and artistic to the last plant of them, sure enough. These two sunk panels and the two end sunk ditto, have circular flower-beds on the lower side, and oblong beds of Rhododendrons between, two of each opposite the end panels, and three of each opposite the chains. Let us take the west end, and say a circle bed with King Rufus and two rows of Flower of the Day round it; the second bed with Nosegay or Fothergillii, one row of Flower of the Day round it, and one row of Sidonia outside; the third bed is Tropæolum elegans edged with blue Lobelia; the fourth with Calceolaria amplexicaulis edged with Brilliant Geranium; and the fifth and last on that side of the centre of the terrace a greenhouse Geranium of some floribunda cast, too floristical for a telling sort in a bed. Bedding Geraniums are for bedding out, florists' kinds to be exhibited in pots only, and pot luck never comes of trying them the one for the other. Light Minimum Geranium round that bed.

The first bed of this run on the east or north side of the centre is with "improved" Nosegay Geranium, which is after the crimson Minimum, two rows of Fair Helen round it, and edged with light Minimum, but blush Minimum is the better name; the second is with Calceolaria amplexicaulis edged with Brilliant Geranium; third with Tropæolum elegans edged with blue Lobelia. The last two at the farthest end are like the first pair on the west end. King Rufus in one, and Fothergillii Nosegay in the other, and then the drop-beds on the slopes at both ends of the terrace; there are eight in number at each end, and they seem to drop or hang down from the eight points at the springing of so many arches. The arches are of variegated Hollies, and there is one row of Geraniums along the arches and going the drop-beds. Baron Hugel or Bishopstow Scarlet are the best kinds for that one row, because they have the best marked horseshoe leaf, and so contrast, that way, with the variegated Holly; but this season these kinds could not be had, or if they could, other places were so much in want of them that they could not be spared, and Mangles' Variegated was put instead of them. Mangles' and the variegated Hollies give the same effect as the variegated Alyssum with Flower of the Day, but not quite so bad. These two being both hard in their looks, so to speak, while Flower of the Day is soft, as it were, and making a worse sight for the eye with the Alyssum.

The drop-beds themselves are as follows:—Calceolaria floribunda in the centre, Crystal Palace Scarlet Geranium round it, and the festooned line of Mangles' from the arches coming round the edges of all the drop-beds, which finishes my day's

work. But in the private propagating-ground, to which I have a ticket of leave, I saw a quantity of fine plants of the very original variegated Noddy of which Miller wrote as the first variegated sport from seeds in England of that race; and I would be bound they are intended for a shot-silk bed at last, now that they have such a stock of *Verbena venosa* to shot-silk with that sort, though not the kind exactly which made the original, but a better kind. It is the greatest weed among all Geraniums, and yet will make one of the best-telling beds in a garden, when shot-silked with the purple *venosa*, in the hands of good trainers, as those at the Crystal Palace certainly must be, else they would never venture to risk so many beds of *Tropæolum elegans* with such slender edgings as the Golden Chain or the blue *Lobelia*, while I am warning all my country cousins to beware of elegans, and see it does not kill or run over any edging they can venture on; and so it will if they, these cousins, go out a-haymaking but for one week, to say nothing of the harvest and the staff of life, and how it is to be saved.

They are building the broken wing for a grand orangery to be kept at 50° all the winter, and no gas, or dancing and tumbling to be allowed to fluce off their leaves; but they say the frost of last winter did the big Orange trees a world of good by getting off the old leaves then thoroughly poisoned with the gas and night work; at all events they look now in their renewed leaves very different and very much better than ever they did in June, on this side of the channel.

FUCHSIAS.—The beds of Fuchsias on the Rose Mount. At the Crystal Palace is a new experiment to find out if any, or how many, kinds of the new style of Fuchsias are suitable or not adapted to the bedding system. Sir Colin Campbell is the one under experiment. Of course *globosa* will make a good edging to any kind of Fuchsia, and so would *microphylla*. *Heliotropium corymbosum* was there last year, and in the hot summer of 1859, and is now proved to be the best bedder of all the *Heliotropes* that have been tried there. The common *Heliotrope* takes a long while to start after planting out, and once it is off it is a wilding. But about the Fuchsias, as long as I think of it allow me to introduce you and two or three friends to Smith's Mammoth; you will see it advertised in our last Number as having had a first-class certificate from the Floral Committee, but I assure you there is no other Fuchsia like it. It is a Mammoth of a double Fuchsia, and hangs just like the bell on the neck of a ram, down the country, to let the ewe with the crooked horn know which way to turn, as this bell of a double Fuchsia will let a gardener know how to take a prize.

D. BEATON.

GROWING CHRYSANTHEMUMS FOR CUT FLOWERS.

I HAVE been growing my Chrysanthemums as Mr. Beaton advised last December. I let them grow, and did not stop them until their first bud appeared, then took it out. I have mine planted three and four in eleven-inch pots. They have grown up full a yard in height, and are very healthy, strong plants. I have noticed many have thrown out a small blind bud from its centre. After this the laterals have started and are now from 4 inches to 9 inches in length. They are exposed to the sun all the day till four o'clock. Should they be in a more sheltered place? Also, am I to pinch out the next bud of these lateral shoots? The only fear I have is, that they will show bloom too early.—A SUBSCRIBER.

[There is not the smallest danger of your Chrysanthemums coming into bloom one week before the usual time. All our art failed to get them in before their usual time; but some have been kept back all the winter and till late in the spring. You ought to have Mr. Holmes' catalogue, which tells the proper time to bloom all kinds from. You are now in the second lot with all those that have the laterals and the "small blind bud" which is the first bud. Thin the laterals well now—three laterals will give very early bloom. But see in the same report where Mr. Bird has his plants, and follow him and beat him, and you will be first.]

... of sixty of the gardeners employed at the Crystal Palace, and Mr. Eyles, Foreman of the Gardens of the Royal Horticultural Society, Kensington, were in an excellent dinner at the Crystal Palace, on the 25th inst.

establishment. The occasion was to celebrate the presentation of a handsome silver snuff-box to Mr. William Dines, general Foreman of the Gardens under Mr. Eyles. The ceremony was performed by Mr. John Gribben, in a neat and complimentary speech, and Mr. Dines thanked his friends in a feeling and appropriate manner. The inscription on the box is as follows:—

PRESENTED TO
MR. WM. DINES,
BY THE GARDENERS EMPLOYED
AT THE ROYAL HORTICULTURAL SOCIETY,
SOUTH KENSINGTON,
TO MARK THEIR ESTEEM FOR HIS UNIFORM
CIVILITY AS FOREMAN.
JUNE 25TH, 1861.

CULTURE OF THE GRAPE VINE.

(Continued from page 236.)

CULTURE IN THE VINERY.

THERE is no doubt that the management of the Vine is the most successful and most certain in houses built expressly for the purpose, and kept especially in heat, air-giving, and general culture for the production of that fine and delicious wholesome fruit. To grow it to the greatest perfection and to furnish good fruit all the year round, three houses are necessary, one for the earliest crop, another for the summer crop, and the third for the autumn and winter crop. In large establishments this division is still further carried out, by having houses planted with some kinds that require peculiar treatment—as for instance, one house is filled entirely with the Muscat of Alexandria Grape, or allied kinds, because such sorts require a higher and drier temperature when ripening than others; and then, again, another house is planted entirely with the West's St. Peter's Grape, and similar sorts to ripen in the darker months of the year. A fine example of the latter mode was a few years ago at Chatsworth, and may, probably, be there yet. The finest example of a Muscat-house that I have seen is at Penryn Castle, near Bangor, in North Wales.

Both these examples are in lean-to houses, but there need be no dispute that the best form for a vinery is the span-roof, provided it is properly ventilated at the apex to let out the superabundant heat that accumulates there. If the house is intended to be forced early, I should then have the border entirely inside; but for a general crop, then in order to give the Vines a large pasture I should recommend the walls to be built on arches, and have additional borders on both sides. The aspect of such a vinery should be east and west. It will then have the benefit of sunlight from the morning to the evening. These borders would be improved and made more perfect if chambered and heated as described before. In other respects as to the compost, draining and sheltering, I have nothing to add to my former account of those matters.

For the early vinery I have stated that the border should be entirely inside, because then the root action goes on simultaneously with the top action—a very important point, for how can the sap flow freely from roots in a cold soil exposed to all the severity of winter? It, however, must be borne in mind, that a border covered with glass has no chance of receiving moisture from rains: hence that necessary element water must be supplied from the watering-pot and right freely, so that it may be wet quite through. Just at the time when the fruit is swelling two or three waterings with liquid manure may be applied with advantage, more especially after the borders have been occupied with the Vines for three or more years. The mode by which I made manure water for this purpose was as follows:—I had large tubs kept for the purpose. I procured all the dung I could get from the poultry-yard and pigeon-cote, and if that was not sufficient I added to it a quantity of cowdung, collected clear of straw. To this was added a lot of soot and a small quantity of quicklime. With these enriching manures I filled my tubs about a third-part full, and then filled up with hot water, stirring the whole well together right down to the bottom of the tub. As soon as it cooled down to a milkwarm temperature and the heavier particles had settled to the bottom, it was applied to the borders, when moderately dry, in that state. If it was judged to be too strong, then that strength was reduced by adding tepid water sufficient for the purpose. The lime and the soot effectually killed any living insects that might be in the dung, and the hot water destroyed their eggs. Should there be any worms in the borders, this kind of composting liquid

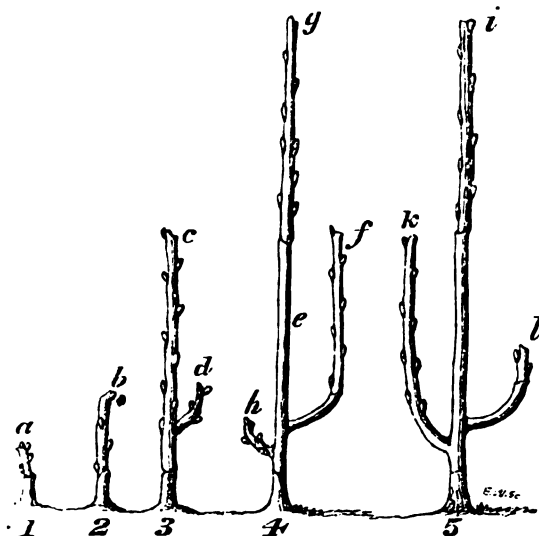
manure killed them also. The borders inside the summer and autumn vineries should, in the growing season, have a plentiful supply of water sufficient to thoroughly moisten the soil.

As the fruit and wood ripen the watering should be more moderate, and be finally relinquished when maturity is accomplished. Then every part of the vineries should be kept as dry as possible, both to prevent the Grapes from moulding and the leaves from decaying prematurely.

Heating.—Very good Grapes may be, and indeed are, grown where the heat is furnished by common flues; but there is always danger of flues bursting by internal explosions of confined air, or any other cause: hence it is now universally allowed, that there is no system of heating so safe and easy to manage as that of circulating hot water in iron pipes connected with a sufficiently large boiler and capacious fireplace. And let me in this place warn the hothouse against false economy in those two important points—namely, the size of the boiler and the extent of piping. There can hardly be too much of the latter, for it is easy to manage the fire so as to heat the water moderately; but it is not so easy to heat a large body of air to the right temperature, if the boiler is small and the pipes short in extent of size and number. Three or four pipes will give out more heat from a given quantity of fuel than one or two filled with water nearly to boiling-heat, besides being fifty times safer and easier to manage: therefore, whatever you do, have plenty of piping and a boiler large enough to heat the water moderately.

Another mistake in regard to the situation of the pipes—they are too often placed close, or nearly close, to the soil of the border. Though heat ascends, it also radiates, and that radiates downwards dries up and parches the soil of which the border is made. That is an evil which may be easily avoided by placing the pipes upon stands a foot or more, as may be convenient, from the ground. By so arranging the hot-water pipes, the drying of the soil will be prevented.

PRUNING AND TRAINING.—In the vinery where everything is subordinate to the Grape, various modes of pruning and training may be adopted. In my opinion there are only two modes that are really useful. The first is the spur system, which I have already described in treating of the Vine in the greenhouse; and I must say, after nearly half a century's practice I consider this mode the best, because by it no strength of the Vine is lost, and besides that its simplicity, regularity, and neatness, are great recommendations.



The next best is that called the long-shoot system. I believe it was first adopted by my late friend, Mr. Mearns, then gardener at Shobden Court, in Herefordshire, and was described by him in the fourth volume, page 246, of the "Horticultural Transactions." The best way to describe this scientific mode is to refer the reader to the figures above. Fig. 1 shows a young Vine just planted and cut down to the bottom of the rafter at *a*, and one shoot only allowed to grow and be trained to the rafter. During that summer the Vine is allowed to grow if it will to the top of the rafter and is then stopped. The laterals are also

stopped at the first joint, and kept stopped from time to time as they break forth again. At the end of autumn, when the leaves have all fallen and the plant is at rest, it is cut down to three or four eyes, as shown in fig. 2 at *b*. The second year two shoots are left to grow, and the strongest is stopped when it has reached a foot or two beyond the middle of the rafter. The weaker is stopped also, but nearer to the place it started from. In the autumn following these two shoots are pruned as shown at fig. 3, *c* and *d*. The leading and stronger shoot, *c*, is allowed that year to bear a crop of fruit, and the weaker one, *d*, is allowed to grow up by the side of *c*, and is stopped at a foot or so beyond it. The reader will perceive that the shoot *c* is bearing fruit that year, and the spur *d* is producing a shoot to bear fruit in its place the year after. The shoot from the top of *c* is allowed to run up to the top of the rafter and is there stopped. The laterals on the upper part of *c* are stopped at the first joint, as also are those on the shoot *d*. The winter following the Vine is pruned as shown in fig. 4. The shoot made from the bearing-shoot *e* is cut off within a foot of the top of the rafter at *g*, and shoot *f* from the spur *d* is pruned to about the end of the shoot that has borne fruit. All the spurs on *e* are cut clean off close to the main stem. Each Vine, it is evident, now has fruit-bearing shoots that will furnish bunches from the bottom to the top of each rafter. The branch *f* may be trained close to the barren stem *e*, and the shoot that will spring from its top may be a little diverged outwards, so as not to interfere with the fruit-bearing shoot *g*. A spur at *h* is left to produce a young shoot the next summer to replace *f*. In the autumn of that year the centre shoot *g* is cut out entirely, and the one *f* is brought into its place. Fig. 5 shows this—the Vine is pruned at *i*, which has reached the top of the roof, and at *k*, the shoot that grew from *h* (fig. 4), from *l* a young shoot will spring to supply the place of *f* (fig. 4). This completes the circle, and the same method must be followed year after year, always taking care that the rafters are furnished from the bottom with one shoot bearing fruit half way up, and another fruitful branch from the centre of the rafter to bear fruit to the top the same year, leaving a spur at the bottom to produce a shoot to replace the whole eventually. This system is very beautiful in practice though tedious to describe. By it large bunches of excellent fruit may be produced, as, indeed, I have proved, both by my own practice and that of others that I have visited.

The vineries that are devoted entirely to the Muscat of Alexandria, Canon Hall, and allied kinds, require to be kept very dry when ripe or nearly so, in order to produce that high, rich amber colour for which they are so justly admired: hence there should not be a single plant allowed in them, for the necessary watering of plants sends up a moisture that is injurious to these Grapes. The best plan is either to cover the entire internal floor with flags; or, if that is inconvenient, let the floor, by which I not only mean the walks but the borders also, be covered with clean dry gravel.

By paying attention to these points, and keeping the Vines clear of insects and mildew, the cultivator may produce as good Grapes as ever were grown.—T. APPELBY.

(To be continued.)

CROSS-BRED DIANTHUS SEEDLINGS.

HEATED OPEN BORDER.

I HAVE now in flower many seedlings from *Dianthus Heddewigii* crossed by Sweet William. They have the appearance of dwarf, stout Indian Pinks, but the blossom is exactly like that of the male parent doubled or rather trebled in size. They vary much in tint and quality. One alone of the lot has turned up a trump, if I may use the expression. In colour it equals if not surpasses the best *Heddewigii* I ever saw, and is the nearest approach to a perfect circular flower I have ever met with. The limb is surrounded with the regularly-fringed edge of the Sweet William parent. I will send you a cutting soon. [Many thanks, a batch of the same cross was exhibited before the Floral Committee, but the flowers were too dark and dull.]

I have a heated border in the open air in full operation. The plants have only been out about three weeks, but already show unmistakable signs of doing something before long. One portion is reserved for Cape and other bulbs exclusively, and will have arrangements for seasonal treatment. The only striking observable effect at present is a most important one—to wit, that the

plants went on growing without receiving any check from planting them out. This will add, at least, several weeks to their duration of growth, and will, I hope, enable late-blooming sorts to flower before the frosts come.

The experiments will not be confined to stove plants, as I wish to note the behaviour of certain hardier plants under the circumstances—such as the ripening of seed, &c.

I am trying once more my hand on the Grape Vine. I have now a healthy bunch of eight berries (Black Hamburg crossed with the Canon Hall Muscat). Every anther was abstracted two days before their period of expansion, and the whole enclosed in a bag of muslin, the pores of which were closed with size. I have great confidence in the reality of the cross. I am just now following up a course of most curious, and, in part, new observations in cross-breeding; but as it is hardly satisfactory to any party concerned to publish unfinished investigations, I have not as yet communicated with any one on the matter.—R. T. C.

[Let us know the result.—EDS. J. OF H.]

CRYSTAL PALACE ROSE SHOW.—JULY 6.

WHATEVER anticipations may have been indulged in as to the character of this Show were amply borne out by the result. On the one hand, it was believed that as two previous exhibitions of the National Rose Show had been held there, the announcement that they would hereafter take place in connection with the Royal Horticultural Society at Kensington Gore would not deter exhibitors from contending for the very liberal prizes offered by the Crystal Palace Company, and the entries were more numerous than on any former occasion; while, on the other hand, it was believed that, owing to the character of the season, and the immense losses amongst Rose-growers, there must be a deficiency in character; and this, too, was abundantly fulfilled. I never recollect seeing such a thorough metamorphosis as some of the flowers exhibited. Such well-known flowers as Général Jacqueminot and Paul Ricaut would have been unrecognisable but for the names attached; one bloom of the former was quite as much mottled as any Triomphe d'Amiens could be. Baronne Prevost was shown washy and ill-shaped. Duchess of Sutherland as bad as any monthly China; and, generally speaking, the blooms were far short of the standard—I say generally, for some of them were truly grand. The Senateurs Vaissees and Généraux Jacqueminots in both Mr. Keynes' and Mr. Cranston's stands were magnificent flowers; and here and there one came across flowers of surpassing excellence, and probably, considering the season, many will be ready to say it was far better than could have been anticipated.

The new Roses were, as usual, the subjects of special interest; and again Mr. Standish, of Bagehot, and Messrs. Fraser, of Lea Bridge, ran very hard for the first prize: the tables this year were, however, turned, the former gentleman taking first, with the following, some of which, marked thus *, are still in his hands to be let out this autumn:—Madame Furtado (ex. ex.), Abdel Kader, John Standish, Princesse Clothilde, *Gregoire Bordillon (a rich, lovely crimson), *Marguerite Appert (blush white—like Caroline de Sansal in colour, but not in shape, it being a flatter Rose), André Desportes, Madam Standish, John Waterer, Eugène Appert, Reine des Violettes (rubbish!), Mademoiselle Bonnaire, *Comte de Falloux, *Reynolds Hole (a beautiful lively pink, very much the shade of colour of Catherine Guillot, B.; but very vigorous, holding its head well up), Louis XIV. (ex. ex.), and Ophelia (Tea). In Messrs. Frasers' were Mademoiselle Bonnaire, Madame Furtado, Prairie de Terre Voire, Eugène Appert, Triomphe de Lyon, General Washington, Earl of Arundel, Victor Verdier, Louis XIV., Vainqueur de Solferino, Belle de Bourg la Reine, Parmentier and Reine des Violettes.

I was glad to find (I suppose we all are when we are right) that my judgment given in the earlier part of the season was not far out. Of the Roses of 1860, I think we shall find that Senateurs Vaissees, Victor Verdier, Madame Charles Crapelet, Madame de Nîmes, Louis XIV., and Mdle. Bonnaire the gems. And of 1861, Madame Furtado, General Washington, and Comte de Falloux will take a high place; while Reine des Violettes, lauded by some as the best Rose of the season, will find its appropriate place on a dunghill, or a stock to bud on. More of these by-and-by.

Amongst Growers. In class 1 (ninety-six varieties), the first prize was taken by Mr. J. Mitchell of Biledown; the second by Mr. J. Keynes of the Crystal Palace.

Mr. W. Paul; the 4th by Messrs. Paul & Son; and the 5th by Mr. Edward Hollamby, of Tambridge Wells. Ninety-six names is an awful task, and, generally speaking, the best flowers are to be found in the smaller classes.

In class 2 (forty-eight varieties), Mr. Cranston was first; Mr. Keynes second; Mr. E. Tiley, of Bath, third; Mr. E. Hollamby fourth; Mr. B. F. Cant, of Colchester, fifth. Mr. Cranston's lot comprised Senateur Vaisee (a splendid truss—in fact, Général Jacqueminot with twice as much stuff in it), Madame Charles Crapelet (a beautiful light crimson Rose, large petal, and fine shape), Général Jacqueminot, Eugène Appert, Anna Alexieff, Souvenir de la Malmaison, (B.), Triomphe de Lyon, Gloire de Dijon, Mdle. Marie Dauvesse, Louis XIV. (a splendid Rose), Virginal (beautiful pinky white), Souvenir de la Reine de l'Angleterre, Caroline de Sansal, Alexandrine Bachmetoff, Evêque de Nîmes (very fine), Victor Verdier, Princesse Mathilde, La Sylphide (Tea), Lælia, Baronne Halles (very fine), François Arago (very dark), Madame Therese Appert, Dr. Marx, Louis Odier, l'Enfant de Mont Carmel, Odeur Vital, Manory, Madame Furtado, Eugène Appert (ex.), Alphonse Karr, Madame Vidot, Lord Raglan, Louis Chaix (ex. ex.), Comtesse de Chabrilant. All those not otherwise marked are Hybrid Perpetuals.

In class 3 (twenty-four varieties), Mr. Keynes was first; Mr. Cranston second, Mr. Laing, of Twickenham, third, Mr. J. Cattell, of Westerham, fourth; and Mr. Edward Shenton fifth. Mr. Keynes' comprised Gloire de Vitry, Triomphe des Bennes (a grand bloom), Madame Vigeron, Madame Vidot, Léon des Combats, Comtesse de Chabrilant, Lord Raglan, Pies IX., Comte de Nanteuil, Général Jacqueminot, Madam Rivers, Victor Verdier, Anna de Diesbach, Prince Léon, François Premier, La Ville de St. Denis, Jules Margottin, Paul Duprez, Senateur Vaisee (a magnificent bloom), Duc d'Orleans, and Pauline Lanzenzen.

In class 4 (twelve varieties), Mr. Keynes again was first; Mr. Cant second, Mr. Alfred Gosling (?) third, Mr. John Cattell fourth, Mr. Edward Shenton fifth. Mr. Keynes' flowers were Madame Hector Jacquin, Paul Duprez, Madame Vidot, La Ville de St. Denis, Souvenir de la Malmaison, Madame Vigeron (a fine Rose), Gloire de Vitry, Général Jacqueminot, Gloire de Dijon, Léon des Combats, Comte de Nanteuil. Mr. Cant's flowers were Charles Lawson, Madam Rivers, Pauline Lanzenzen, Gloire de Mosseuses, Triomphe de Paris, Général Jacqueminot, Comtesse de Chabrilant, Baronne Halles, Colonel de Rougemont, Ohi, and Mathurin Regnier.

In class 5 (twenty-four varieties, three trusses of each), Mr. Keynes was again first, Mr. Laing second, Messrs. Fraser third, Mr. James Mitchell fourth, and Mr. John Cattell fifth. Mr. Keynes' flowers were Wm. Griffiths, Léon des Combats, Souvenir de Leveson Gower, Virginal, Victor Verdier, Général Castellane, Pauline Lanzenzen, Mathurin Regnier, Gloire de Dijon, Comte de Nanteuil, François Premier, Madame Vidot, Madam Rivers, Evêque de Nîmes, Général Jacqueminot, and Madame Mielles.

Amongst Amateurs. In class 6 (thirty-six varieties), Mr. Hedge, of Colchester, was first; Mr. Keel, second; Mr. Hollingworth, third; Mr. Evans, fourth; Mr. Thorneycroft, fifth; and extra, Mr. Rowland. Mr. Hedge's flowers were Géant des Batailles, La Fontaine, Auguste Mié, Shakspeare, Wm. Griffiths, Jacques Lafette, Virginal, Duchess of Buccleugh, Gloire de Mosseuses, Prince Regent, Duchess of Sutherland, La Ville de St. Denis, Reine Victoria, Lord Raglan, Madame Knorr, Madame Boll, Acidale, Coup d'Hébé, Bizarre Martré, Général Jacqueminot, Eugène Desgaches, Souvenir de la Reine de l'Angleterre, Juno, Charles Lawson, Odeur Vital, Letitia, Caroline de Sansal, Princesse Hélène, Leo the Tenth, Paul Ricaut, and Cynthia.

In class 7, Mr. Hedge first, Mr. W. Corp second, Mr. Thurland third, Mr. Moffatt fourth, Mr. W. Mercer fifth, and Messrs. Walker, Evans, and Cooper, extra.

In Class 8 (eighteen varieties), Mr. John Dennis first, Mr. Moffatt and Mr. Edge equal second, Mr. Evans third, Mr. Moore fourth, and Mr. Treen fifth. Mr. Dennis' stand consisted of Madame de Cambacères, Melaine Oge, Coup d'Hébé, Comtesse de Chabrilant, William Griffiths, William Jesse, Alexandrine Bachmetoff, Anna Alexieff, Madame Hector Jacquin, Madame Knorr, Auguste Mié, Madame Portenere, Gloire de Dijon, Souvenir de la Reine de l'Angleterre, Madam Rivers.

In class 9 (twelve varieties), Mr. Wm. Corp, of Salisbury, was first; Mr. J. Varney second, Rev. Mr. Child third, Mr. Vockins fourth, and Mr. Hedge fifth.

In Pot Roses, a nice collection was shown by Mr. Turner, of Slough, but no one was able to name more than a few of them.

Amongst Miscellaneous Objects were some fine Pinks, Carnations, and Picotees, from Mr. Turner, of Slough; and some Pansies and Pinks from Mr. Bragg of the same place. Ferns and other plants belonging to the Company were scattered up and down, and many admirers crowded round the tables during the day.—D., Deal.

GROWERS FOR SALE.

NINETY-SIX VARIETIES (One Truss of each).—First, J. Mitchell, Pitdown Nurseries, Maresfield, Sussex. Second, J. Keynes, Salisbury. Third, W. Paul, Cheshunt Nurseries, Waltham Cross. Fourth, Messrs. Paul and Son, Old Cheshunt Nurseries, Cheshunt. Fifth, E. Hollamby, Rose Nurseries, Tunbridge Wells.

FOURTY-EIGHT VARIETIES (One Truss of each).—First, J. Cranston, King's Acre Nurseries, near Hereford. Second, J. Keynes, Salisbury. Third, E. Tiley, 14, Abbey Churchyard, Bath. Fourth, E. Hollamby, Rose Nurseries, Tunbridge Wells. Fifth, B. Cant, Colchester.

TWENTY-FOUR VARIETIES (One Truss of each).—First, J. Keynes, Salisbury. Second, J. Cranston, King's Acre Nurseries, near Hereford. Third, R. Laing, the Nurseries, Twickenham. Fourth, J. Cattell, Westerham, Kent. Fifth, B. Cant, Colchester.

TWELVE VARIETIES (One Truss of each).—First, J. Keynes, Salisbury. Second, B. Cant, Colchester. Third, A. Gosling, Tower Nursery, Heathfield, Sussex. Fourth, J. Cattell, Westerham, Kent. Fifth, E. Shenton, Hendon Park, Nurseries, Hendon.

TWENTY-FOUR VARIETIES (Three Trusses of each).—First, J. Keynes, Salisbury. Second, R. Laing, the Nurseries, Twickenham. Third, Messrs. J. & J. Fraser, Lea Bridge Road Nurseries, Leyton. Fourth, J. Mitchell, Pitdown Nurseries, Maresfield, Sussex. Fifth, J. Cattell, Westerham, Kent.

AMATEURS.

THIRTY-SIX VARIETIES (One Truss of each).—First, J. T. Hedge, Reed Hall, Colchester. Second, H. Keel, gardener to A. Lawrence, Esq., Bath. Third, J. Hollingworth, Maidstone. Fourth, S. Evans, gardener to C. N. Newdegate, Esq., M.P., Arbury, Nuneaton. Fifth, H. Thameycroft, Floore, near Weedon. Extra prize, A. Rowland, Bessingthorpe, Leicestershire.

TWENTY-FOUR VARIETIES (One Truss of each).—First, J. T. Hedge, Reed Hall, Colchester. Second, W. Corp, Milford, Salisbury. Third, W. F. Thurland, New College, Oxford. Fourth, A. Moffatt, Easton Lodge, Dunmow. Fifth, W. Mercer, Grove House, Hemstead, near Staplehurst. Extra prize, T. Walker, 21, Merton Street, Oxford; S. Evans, gardener to C. N. Newdegate, Esq., M.P., Arbury, Nuneaton. Dr. Cooper, Slough.

EIGHTEEN VARIETIES (One Truss of each).—First, J. Dennis, gardener to H. S. Hayward, Esq., Follington, Hurst Green, Sussex. Second, J. T. Hedge, Reed Hall, Colchester; A. Moffatt, Easton Lodge, Dunmow. (Equal.) Third, S. Evans, gardener to C. N. Newdegate, Esq., M.P., Arbury, Nuneaton. Fourth, E. Moore, Howell, Surrey. Fifth, W. H. Treven, Rugby.

TWELVE VARIETIES (One Truss of each).—First, W. Corp, Milford, Salisbury. Second, T. Venn, gardener to W. Smith, Esq., Upper Norwood. Third, Rev. — Child, Little Easton, Dunmow, Essex. Fourth, W. Yockins, gardener to J. T. Braham, Esq., Brockley Hall, Lewisham. Fifth, J. T. Hedge, Reed Hall, Colchester.

OPEN TO ALL.

New Boxes of 1860 and 1861.

FOR THE BEST COLLECTION (One Truss of each variety).—First, J. Standish, Royal Nursery, Baginbode. Second, Fraser & Son, Lea Bridge Road Nurseries, Leyton. Third, Paul & Son, Old Cheshunt Nurseries, Cheshunt.

Boxes in Pots.

SIX BOXES, SIX VARIETIES (In Pots not exceeding 15 inches in diameter).—First and second withheld. Third, G. Turner, the Royal Nurseries, Slough.

FOR THE BEST COLLECTION OF BOXES (In Pots not exceeding 8 inches in diameter).—First, G. Turner, the Royal Nurseries, Slough.

IN-DOOR PLANTS.*

A GARDEN was the first residence of man, and gardening his first occupation: He drew his first breath, and found his first pleasures in the Garden of Eden, and those who now delight in the flowers and fruits which were its produce show that they are not altogether decayed from the pure tastes which characterized the first estate of our nature. It is a gratifying characteristic of our countrymen, and we glory in the fact that, from the Queen who adorns our nation's throne, to the poorest tenant of the meanest attic in St. Giles', a love of flowers and of their cultivation prevails. We glory in the fact because it demonstrates that a love of the beautiful and the pure pervades our people—is inherent in them; and where that love predominates, though there may be—nay, must be—many deviations, much error, much vice, and much sin, for these are incidents of our fallen nature, yet that love, like the bias of the bowler's ball, has a constant tendency to wind round to "the mark of our high calling."

We hail, therefore, the little volume before us, because it is a good and faithful help to all who have that relic of Eden in them—the love of flowers—yet who have not the knowledge how to cultivate them.

"My aim in writing this little book," says the authoress, "has been to give such plain and practical directions for the cultivation of in-door plants as may enable any lady to choose and

* *In-door Plants, and how to Grow them for the Drawing-room, Balcony, and Greenhouse, containing Clear Instructions by which Ladies may train, at a small expense, a constant Supply of Flowers.* By E. A. Maling, author of "Smith, Elder, & Co."

grow abundant flowers to adorn her house; and I am the more confident of the sufficiency of the rules here laid down, because they have been tested by myself during some years' practice in rearing and keeping plants." Now, we happen to know that this is strictly true. An acquaintance with the writer is a pleasure and a benefit to us—for defective health imprisons her to her room; and it is a benefit to us, because it is an example to know, how, passing aside all useless regret, she has admirably succeeded in adorning her place of imprisonment. Picciola had but one little plant in his cell, but in Miss Maling's are many of the most beautiful, all nursed with untiring attention, and all demonstrating that that attention is guided by skill. We remember reading long since, "Travels Round my Chamber," and no unfitting companion to those essays would be a series by Miss Maling, "Visits to my Room Plants." Had we permission we would give a sketch, historical and biographical, of the tenants of that room, the tenants of its aviary, and its plant-cases, nor would we drop our pen until we had said somewhat about the presider over their destinies.

It must at present suffice for us to observe, that those plants are unmistakable evidence of a knowledge of their cultivation judiciously applied. In the volume before us that knowledge is recorded. "I have described," says the authoress, "not only what should be done, but also how to do it, knowing that the simplest points of plant culture are often the worst attended to, merely because it is supposed that every one knows how to do that." This is no more than the truth, and we recommend to all ladies fond of flower-culture, "In-door-plants and How to Grow Them," as one of the safest and most explicit of guides.

NEW AND RARE PLANTS.

CALADIUM BICOLOR, var. CHANTINI (Chantini's Two-coloured Caladium).

Nat. Ord., Araceæ. Linn., Monœcia Monandria. This is really a three-coloured-leaved Caladium, for the green disk of the leaves is spotted with white, and the veins even on the upper surface deeply crimsoned. "Among the many splendid kinds of variegated-leaved plants, not one surpasses this in effectiveness."—(*Botanical Magazine*, t. 5255.)

BEGONIA GLANDULOSA (Glandular-leaved Begonia).

Nat. Ord., Begoniaceæ. Linn., Monœcia Polyandria. It has also been called *B. nigro-venia*, and is probably identical with *B. multinervia*. Flowers small and pale green; leaves with black-coloured veins on the upper surface. Native of Venezuela.—(*Ibid.*, t. 5256.)

RESTREPIA LANSBERGII (Lansberg's Restrepia).

Nat. Ord., Orchidaceæ. Linn., Gynandria Monandria. A beautiful small Orchid, native of Guatemala. Flowers greenish-yellow, spotted with brown. "Lateral sepals and petals have clavate, or club-shaped, tips, resembling the antennæ of some insects."—(*Ibid.*, t. 5257.)

LINDENIA RIVALEIS (Riverside Lindenia).

Nat. Ord., Rubiaceæ. Linn., Pentandria Monogynia. Native of river sides in South Mexico and Guatemala. It is a handsome evergreen shrub. Flowers creamy white, with long pinkish tubes, blooming in May in the Kew stoves.—(*Ibid.*, t. 5258.)

LEPANTHES CALODICTYON (Net-leaved Lepanthes).

Nat. Ord., Orchidaceæ. Linn., Gynandria Monandria. A very singular and beautiful little plant. Leaves pale green, with broad, brown, net-like veins; stem passing up through trumpet-shaped scales; flowers yellow and crimson.—(*Ibid.*, t. 5259.)

MOSCATELLO MELON—MELONS OUT OF DOORS.

CAN the author of the article on Melons, in Mr. Dickens' "All the Year Round," be induced to tell us where to get the seed of the variety he recommends (Moscatello)? He says it was introduced into France from Italy. And will you further oblige me by saying if you think a system of out-door cultivation, with protection, for the centres of plants can be adopted in this country? Such is the plan the writer recommends for growing a sort which he esteems one of the best in cultivation, and he certainly seems to be speaking of growing it in England.—H. H.

[We should think that if the editor of "All the Year Round"

varieties did cross. Mr. Beaton might advance this case in support of his belief that Wheat is fertilised in the bud.

As Mr. Beaton alludes to some mistake which he has made, might I venture to suggest to him to punish himself by telling sooner than he intended by what means he can produce from pollen of the same flower placed on the stigmas of the same variety two different sets of seedlings? That is a mystery which it is tantalising to wait for.—CHARLES DARWIN, *Down, Bromley, Kent.*

THE PEAR FLY.

(Communicated to the Fruit Committee of the Royal Horticultural Society.)

Dexia nigripes? Walker; *Diptera*, pl. 12, 11.

"I TRUST it will not be uninteresting to the Fruit Committee if I call their attention to the history of a little fly which, without attracting the notice of the gardener, frequently destroys his crops of Pears, and probably Apples also; and if to a knowledge of the economy of the insect I can add a simple method by which its destructive effects may in future be prevented, or at least reduced in extent, I shall not deem the time misspent.

"To Henry Webb, Esq., of Redstone Manor, Reigate, a member of the late Pomological Society, I am indebted for several specimens of Catillac Pears which he sent me on the 25th of June, 1860, in which he had discovered several small maggots, which caused the fruit to fall off even at that early period. I at once placed them in a glass and covered them over, and on opening it in February last I found two flies had been produced, a male and female, which I will endeavour briefly to describe.

"The female is about three-eighths of an inch long, appearing to the naked eye of a pale grey colour, and in general formation like a common house-fly; but under a lens its distinctive characters are at once perceptible. Head semi-orbicular, dingy white, with a black velvety mark in front reaching down to the antennæ, and terminating at the back in form of a crescent; antennæ dark, set with short spines and slightly curved inwards; eyes rich brown, oval, widely separated; thorax ovate, angular at the base, with five remarkable black spots, one on each shoulder and three below, divided by a scarcely perceptible suture; several small black dots between the larger spots, out of which stiff setæ issue, the whole bearing a close resemblance to ermine; scutellum semi-ovate, centre white, with an angular black spot on each side, ending in a point with a stiff seta; abdomen four-jointed, dingy white, with three black spots on each joint, the centre one angular; wings dusky, long oval, with five principal nervures and several transverse, as I have endeavoured to show in the accompanying sketch; legs black. Under a lens this is a very pretty fly, belonging to the family muscidae, of which Mr. Curtis enumerates forty-nine species in British entomology; but in the absence of figures and description I cannot identify it with any of them. It appears, however, to correspond with '*Dexia nigripes*,' figured by Walker, '*Diptera*,' pl. 12, fig. 11, although he describes the thorax as quadrimaculate, yet shows five spots upon it exactly according with my specimen. The male is smaller, of a more common dingy colour and not handsomely spotted. The maggots are very similar to those of the blow-fly but smaller. At what time the eggs were deposited, or in what part, cannot be precisely stated, but most likely when the Pear was in blossom, or very soon afterwards, as I have frequently discovered the larvæ of *Lepidoptera* in the blossoms of other trees, and bred them until they arrived at the perfect state. I think it would be almost impossible to destroy these mischievous larvæ or the flies at this time; but if every gardener who is made aware of their destructive effects were carefully to collect the fruits which they have caused to fall abortive to the ground, and burn them, the species above described might easily be kept under; and by adopting the same plan throughout the season, many other equally injurious insects might be almost extirpated, and thus tidiness and usefulness would be seen linked hand in hand.—F. J. GRAHAM, *Cranford, April 9, 1861.*"

MELON LEAVES TURNING YELLOW.

WILL you inform me the reason why the leaves of my Melon plants are constantly turning first yellow and then become brown and crisp, and crumble to pieces? I thought at first

that it was only the leaves which touched the glass of the frame, but I find some of the under leaves affected in the same manner. I shade with tiffany during very hot sunshine, and give plenty of air day and night; watering when the soil appears getting too dry.—H.

[Leaving other causes out of view, such as dryness at the roots when the surface is sufficiently moist, and want of air when the sun suddenly comes out bright, which exposes the plants alternately to a steaming and a kiln-drying influence, such results will frequently occur from sudden alternations in the weather, from dense cloud to bright sunshine. The more the plants are used to regular shading, the more will they suffer when that regular shading is not given. Half an hour's neglect on a sunny morning will produce the result complained about. The watering, &c., may be all right; a few dull days have enervated the plants, and given the roots little to do. A brisk sun suddenly comes, the leaves to live must perspire freely, and as the activity is not equally communicated to the roots, but they are aroused more slowly, the leaves get scorched because they cannot be sooner supplied with moisture to meet the demands of the sun. A slight shading or a skiff from the syringe will often make and keep all right. We are, however, in doubts as to this being the cause in your case from your giving air night and day. Probably the shading has been extra well attended to, and a little neglect, nevertheless, exhibited at a time when the sun was very powerful.]

WHAT TO LOOK FOR ON THE SEASHORE.

(Continued from Vol. XXV., page 92.)

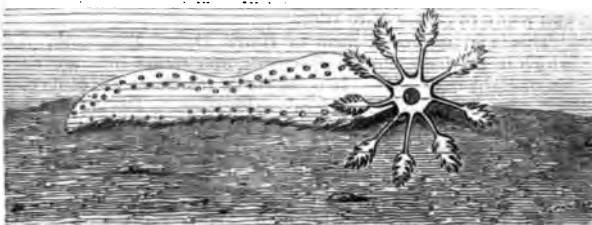
LONG SEA CUCUMBER (*Cucumaria fusiformis*).—This is a



small species, measuring only about an inch in length. It is round, tapers a little towards each extremity; and short as it is, is long in proportion to its thickness. The skin is of a pinkish-white, and covered with feathered papillæ. It has five double alternate rows of suckers; but they are not prominent. It has ten short sub-triangular tentacles, white and feathered.

The Long Sea Cucumber is very sluggish in its temperament, and not given to vary its form much. Many of the *Holothuriæ*, indeed, are extremely apathetic; whilst others are, on the contrary, wonderfully active and lively. This species is also dredged in the Shetland seas.

THE GLASSY SEA CUCUMBER (*Cucumaria hyalina*).—This



also a native of the Shetland seas, is a very elegant and delicate creature, being nearly transparent, and of an opal tint. It is fusiform, or spindle-shaped, attenuated at either extremity. It has two closely-set rows of suckers on each avenue. The tentacles are large, stalked, and feathered at the extremities. Its ordinary length is about 2½ inches, although it is stated to reach to a length of 6 inches.

THE TANGLE SEA CUCUMBER (*Cucumaria fucicola*).—This creature, again, is most commonly taken with a dredge off the coast of Shetland, and is generally met with in seven-fathoms water, where it adheres to the stems of marine plants or to rocks. It is a sluggish species, and clings with wonderful tenacity to whatever substance it attaches itself: this is effected,

as usual, by means of its suckers, which are very strong and closely set in five equidistant rows. Its skin is quite smooth, and its body, when at rest with its tentacles expanded, is mostly of an ovate form, and measures about 3 inches in length. The tentacles themselves are short and somewhat club-shaped.

This creature, like the rest of the Sea Cucumbers, chooses a locality where it can escape the light, the action of which seems to be extremely painful to the whole tribe.—W.

(To be continued.)

PLANTS THAT HAVE STOOD DURING LAST WINTER IN GLOUCESTERSHIRE.

YOUR list of plants destroyed by the last winter must now be almost complete, but only one correspondent has sent you a short list of things that have stood the winter. I send you, therefore, a short list of shrubs and herbaceous plants and bulbs that generally are supposed to require care in the winter, but which have survived in south Gloucestershire without any protection, though many of them are more or less injured. If any of your readers can add to the list of herbaceous plants and bulbs, I shall be much obliged.—H. N. E.

<i>Dehne hybrida</i>	<i>Cypella Herberti</i>
<i>Japonica</i>	<i>Macleania cordata</i>
<i>Mandevilla suaveolens</i>	<i>Spigelia marylandica</i>
<i>Melanthus major</i>	<i>Globularia nudicaulis</i> (G. vulgaris killed)
<i>Stauktonia latifolia</i>	<i>Clematis tubulosa</i>
<i>Pasiflora coriacea</i>	<i>Tropaeolum speciosum</i>
<i>Berberis Fortunei</i> (B. fascicularis killed)	<i>Plumbago capensis</i>
<i>Scarlet Trumpet Honeysuckle</i>	<i>Iris perica</i>
<i>Lardizabala biterminalis</i>	<i>Francoa appendiculata</i>
<i>Bigonia capreolata</i>	<i>Tritonia aurea</i>
<i>Aralia spinosa</i>	<i>Triteleja uniflora</i>
<i>Acacia julibrissin</i>	<i>Erodium hymenoides</i>
<i>Rosa Banksia Fortunei</i>	<i>Cinnum riparium</i>
<i>Sikkim Rhododendron</i>	<i>Lilium lancifolium</i>
<i>Oxalis elegans</i>	<i>Cypripedium spectabile and calceolus</i>
<i>Libertia formosa</i>	

The *Cypripediums* have been in remarkable beauty this year, and I would suggest to your correspondent, "W. X. W.," to grow them in coco-nut refuse, he will find it excellent for all the plants named by him in page 231—*Cypripedium*, *Ochisea*, and *Primula farinosa*.

REPORT ON THE GARDEN PEAS, GROWN AT CHISWICK DURING 1860.

By ROBERT HOOG, LL.D., F.R.H.S., Secretary to the Fruit Committee.
(Concluded from page 237.)

61. Veitch's Perfection JAMES VEITCH, JUN.

The plant is very robust in its habit, and produces a succulent stem 3 feet high. Foliage dark green, and only slightly blotched. The pods are generally in pairs, of a large size, and from ten to fourteen on a plant. They contain from seven to eight very large Peas, which are closely compressed. The ripe seed is large, green, and wrinkled.

Sown February 19th; bloomed June 13th; slatted June 26th; and ready to gather July 16th.

This is an improved form of Hairs' Dwarf Mammoth, than which it produces much larger pods, and comes into use about six or eight days later. It is decidedly the finest Pea of its class, and one deserving of general cultivation. During the past season it suffered like many other varieties from the unusually cold wet weather, and dropped many of its blooms; but in the previous summer it set every bloom, and matured a profusion of its large well-filled pods.

62. Tall Green Mammoth NUTTING & SONS.

<i>Impetitor</i> CHARLWOOD & CUMMINS.
<i>Monarch</i> NOBLE, COOPER, & BOLTON.
<i>Peas' Monarch</i> HURST & M'ULLER.
<i>Brathmore Hero</i> CARTER & CO.
<i>King of the Marrows</i> NOBLE, COOPER & BOLTON.
<i>King of the Marrows</i> SUTTON & SONS.

The plant is a strong and vigorous grower, with a thick succulent stem 6 feet to 8 feet high, and branched. Foliage dark green and blotched. The pods are produced in pairs, and are from twelve to sixteen on a plant. Ripe seed large, green, and wrinkled. Sown February 19th; bloomed June 13th; slatted July 1st; and ready to gather July 20th.

63. Knight's Dwarf Green. NOBLE, COOPER, & BOLTON.

Plant a free and healthy grower, with a branching stem 3 feet high, and very dark green blotched foliage. The pods are produced generally in pairs, and are from ten to twelve on a plant, containing seven good-sized Peas. Ripe seed green and wrinkled.

Sown February 19th; bloomed June 22nd; slatted July 2nd; and ready to gather July 28th.

This is the latest of all the varieties. On the 6th of August it was in full bearing and quite green, while every other sort had either ripened off or was fast approaching the condition of ripeness.

Synoptical Arrangement of the Varieties of Peas, and the Dates on which they were ready for gathering.

I. FRAMES.		V. IMPERIALS.	
Dillistone's Early	June 22nd.	Fairbeard's Surprise	July 9th.
Sangster's No. 1	— 29th.	Harrison's Glory	— 13th.
Early Emperor	July 3rd.	Burbridge's Eclipse	— 14th.
Danecroft Rival	— 3rd.	Flack's Imperial	— 14th.
Tom Thumb	— 3rd.	Banksian Marrow	— 14th.
Telegraph	— 5th.	Schmitar	— 16th.
Early Ringwood	— 6th.	VI. WHITE KNIGHT'S.	
Early Frame	— 7th.	Fairbeard's Nonpareil	July 6th.
Dickson's Favourite	— 7th.	Monsieur Soyer	— 10th.
Bishop's Long-podded	— 9th.	Tall White Mammoth	— 14th.
Auvergne	— 10th.	Maclean's Prolific	— 15th.
Shilling's Grotto	— 10th.	Alliance	— 16th.
Royal Dwarf	— 13th.	British Queen	— 16th.
Victoria Branching	— 16th.	Lynn's Wrinkled Marrow	— 22nd.
II. MARROWS.		Knight's Dwarf White	— 24th.
Champion of Paris	July 5th.	Knight's Tall White	— 24th.
Harrison's Perfection	— 7th.	VII. GREEN MARROW KNIGHT'S.	
Thurston's Reliance	— 10th.	Ne Plus Ultra	July 10th.
Queen of Dwarfs	— 10th.	General Wyndham	— 20th.
November Prolific	— 11th.	VIII. GREEN KNIGHT'S.	
Egg	— 12th.	Advancer	July 3rd.
Victoria Marrow	— 13th.	Mignon	— 3rd.
Danecroft Prolific	— 20th.	Champion of England	— 10th.
Princess Royal	— 20th.	Hairs' Dwarf Mammoth	— 10th.
III. GREEN MARROWS.		Epicurean	— 12th.
Prizetaker	July 6th.	Sea Green	— 12th.
Early Green Marrow	— 10th.	Lord Raglan	— 12th.
Matchless Marrow	— 13th.	Royal Dwarf	— 12th.
Garbutt's Amazon	— 20th.	Victoria Marrow	— 12th.
Sutton's Berkshire Hero	— 25th.	Matchless Marrow	— 12th.
IV. PRUSSIAN.		Burbridge's Eclipse	— 12th.
Groom's Superb	July 14th.	Essex Rival	— 12th.
Woodford Marrow	— 14th.	Woodford Marrow	— 12th.
Batt's Wonder	— 16th.	Groom's Superb	— 12th.
Blue Prussian	— 16th.	Flack's Imperial	— 12th.
		Banksian Marrow	— 12th.
		Tall White Mammoth	— 12th.
		Maclean's Prolific	— 12th.
		Victoria Branching	— 12th.
		Batt's Wonder	— 12th.
		Schmitar	— 12th.
		Alliance	— 12th.
		British Queen	— 12th.
		Veitch's Perfection	— 12th.
		Danecroft Prolific	— 12th.
		Princess Royal	— 12th.
		Garbutt's Amazon	— 12th.
		General Wyndham	— 12th.
		Sutton's Berkshire Hero	— 12th.
		Tall Green Mammoth	— 12th.
		Lynn's Wrinkled Marrow	— 12th.
		Knight's Dwarf White	— 12th.
		Knight's Tall White	— 12th.
		Knight's Dwarf Green	— 12th.

The Varieties of Garden Peas, arranged in the Order in which they come into use, showing their comparative Earliness.

Dillistone's Early	June 22nd.	Sea Green	July 12th.
Sangster's No. 1	— 29th.	Climax	
Early Emperor	July 3rd.	Lord Raglan	July 12th.
Danecroft Rival		Royal Dwarf	
Tom Thumb	July 5th.	Victoria Marrow	July 12th.
Advancer		Matchless Marrow	
Mignon	July 6th.	Burbridge's Eclipse	July 12th.
Telegraph		Essex Rival	
Champion of Paris	July 7th.	Woodford Marrow	July 14th.
Early Ringwood		Groom's Superb	
Prizetaker	July 9th.	Flack's Imperial	July 14th.
Fairbeard's Nonpareil		Banksian Marrow	
Early Frame	July 10th.	Tall White Mammoth	July 15th.
Dickson's Favourite		Maclean's Prolific	
Harrison's Perfection	July 11th.	Victoria Branching	July 16th.
Bishop's Long-podded		Schmitar	
Fairbeard's Surprise	July 12th.	Alliance	July 16th.
Auvergne		British Queen	
Thurston's Reliance	July 13th.	Veitch's Perfection	July 16th.
Shilling's Grotto		Danecroft Prolific	
Queen of Dwarfs	July 14th.	Princess Royal	July 20th.
Early Green Marrow		Garbutt's Amazon	
Monsieur Soyer	July 15th.	General Wyndham	July 20th.
Hairs' Dwarf Mammoth		Sutton's Berkshire Hero	
Champion of England	July 16th.	Tall Green Mammoth	July 22nd.
Ne Plus Ultra		Lynn's Wrinkled Marrow	
November Prolific	July 17th.	Knight's Dwarf White	July 24th.
Egg		Knight's Tall White	
Harrison's Glory	July 18th.	Knight's Dwarf Green	July 24th.
Epicurean			

PINCHING THE SHOOTS OF CURRANT TREES.

WILL you inform a constant subscriber "G. H.," if the practice of nipping off the shoots of Currant trees previous to their ripening is a good one? Also if the lateral shoots which sometimes produced are considered weakening to the trees? Is it a practice you would recommend when the trees bear fruit are very much shaded by an abundance of shoots? I believe I saw it recommended in one of the Numbers of The Cottage Gardener but cannot lay my hands on it at

show a gardener who tells me I am raining my trees by such nipping.

[If we could get at it, we would nip every Currant tree as you propose. The shoots that come so thick in the centre of the tree would shorten to 3 inches or 4 inches, and we use these young shoots for many purposes, such as cracking them in the middle and using them as pegs for flower-buds. If done early, say in the middle of June, some lateral shoots will start from the points of the shoots thus shortened, and these may grow two or three joints and be nipped again. This will swell up the buds near the base, and make them more fruitful when you cut back to two or three buds in winter. The stopping should be confined to nipping the points merely of the main leading-shoots in June, in the case of young bushes that you wish to get larger, and such nipped shoots will often, nay generally, show fruit their whole length next season. In the case of old bushes as large already as are wanted, the shortening of all shoots may be proceeded with as stated above for the central shoots. These stoppings apply to bushes in vigorous condition. In old bushes pretty well worn out, it is a good plan to encourage young shoots from the bottom and otherwise well placed on the bushes, and merely nip the points of them in June and the beginning of July, and remove the old exhausted branches as soon as the fruit has been gathered. We have thus several times renewed old bushes, and found them bear much earlier and more plentifully than young bushes.]

TRADE LISTS RECEIVED.

James Veitch, jun's., Plant Catalogue, Royal Exotic Nursery, King's Road, Chelsea.—This is an admirable catalogue, and contains a vast number of novelties in the way of stove and greenhouse plants. We observe it is very rich in Ferns and Orchids.

A General Descriptive Catalogue of Plants, Trees, Shrubs, &c., by Milne & Co, Wandsworth Road, London.—An excellent general catalogue of a select nursery stock.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Artichokes, when cutting the heads for use cut the stems close to the roots. Clear the stools from decayed leaves, and loosen the surface of the soil about them with the hoe. *Broccoli*, no time should now be lost in getting out the varieties which come in during the autumn. *Cauliflowers*, earth up those that were put in the beginning of last month; plant more for coming into use in the autumn. *Celery*, get out the main crops; loosen the soil about the early crops, and give it good supplies of water, if there is not sufficient rain to keep the soil quite moist. *Cucumbers*, keep the linings of the frames made up so as to cause a gentle warmth to circulate through the bed; for, however warm the weather may be, a mild bottom heat is necessary to procure fine handsome fruit. *Garlic* and *Shallots*, as soon as the tops begin to wither pull up the roots; if favourable weather allow them to remain on the ground for a day or two to dry, then tie them in bunches, to be hung in a dry airy shed or fruit-room. *Lettuce* sow a little of the Paris, White and Bath Cos in drills where the plants are to remain. *Mushrooms*, save and prepare horse-droppings for beds, to produce through the autumn and winter. Take care that newly-made spawn bricks are thoroughly dry before being laid away. *Spinach* sow a few rows, to keep up a succession; thin the preceding crop, and keep it watered in dry weather. *Turnips*, thin out the last sowing to a foot or 15 inches apart. And as the weather is now favourable, the main autumn crop may be sown.

FLOWER GARDEN.

As the bedding plants are now beginning to make vigorous growth, go over the beds frequently, and keep the young shoots of *Verbenas*, *Petunias*, *Salvias*, *Calceolaria amplexicaulis*, &c., nicely regulated and pegged down until the ground is fairly covered, when the shoots may be allowed to grow more at liberty. Continue to put in cuttings or pipings of *Pinks*; they root freely on a gentle bottom heat under hand-glasses, to be kept shaded, or they will succeed on the north side of a wall or fence. The cuttings to be merely pulled out of the old plants at the second or third joint, and pressed between the finger and thumb into light sandy soil, watered with a fine rose before and after

they are inserted; no trimming of the leaves or cutting to a joint is required. Any one who is desirous to improve the race of this beautiful and fragrant flower should attempt to do something in the way of cross-breeding. The most showy herbaceous plants—such as *Phloxes*, *Pentstemons*, &c., will strike freely in some light garden soil in any shady situation on the north side of a wall or fence. *Carnations* and *Piotees* to be layered: this is performed by cutting through the second or third joint, bringing the knife about half an inch up the centre of the shoot, making a tongue; the small portion of stem beyond the joint is cut back to it, and when pegged down in the soil, which should be fine and light, they will soon emit roots.

STOVE.

Continue to keep up a moist, warm atmosphere to plants in active growth. Such of the *Orchids* as have made their growth (known by the pseudo-bulbs having attained their full size) to have less water, and to be gradually inured to a lower temperature and a greater degree of dryness. It should not, however, be forgotten that this progression to a state of rest should be slow and gradual. Destroy by every means beetles and other pests to *Orchid-houses*.

GREENHOUSE AND CONSERVATORY.

Pelargoniums when done blooming to be exposed in an open situation to ripen the wood for a week or ten days, to be then cut down, and cuttings made of their tops; the old plants to be kept rather dry until they begin to break afresh, and the cuttings to be inserted in any open, warm situation, where they will strike root freely without any bottom heat. A number of hard-wooded plants which were cut back a few weeks ago will now be making fresh growth, any requiring to be shifted into larger pots should have their roots well watered before potting. Before potting, carefully loosen the outside roots; after potting, the plants to be kept close for a few days, and to be syringed overhead daily. *Brugmansias* and other very vigorous-growing plants to be frequently assisted with manure water, and as they are liable to get infested with insects the syringe to be frequently applied to keep them under before the plants get into bloom. *Cinerarias*, whether seedlings or suckers, to have regular attention, and those intended for autumn work to be potted forward without delay.

W. KEANE.

DOINGS OF THE LAST WEEK.

SUNSHINE and showers have been its characteristic—rare weather for Turnips, but troublesome for the hay, reviving the fresh-planted greens in the kitchen garden, and just suiting the beds in the flower garden, many of which would take a shower every day and thrive well with it, provided there were plenty of gleams of sunshine between the showers. Except that be the case, warm sunny summers, though rather dry, are the best for the flower garden.

Kept planting out greens, Lettuces, Endive, and Cauliflowers as opportunity offered. *Celery*, too, as ground could be got, and watered what had been put out early, as the showers were too slight to do more than refresh the foliage. Hoed carefully for the last time among Carrots, Parsnips, Onions, and all crops generally, finding it is the most economical plan to cut up weeds before they are an inch high if possible. Soaked the seeds of Bishop's Dwarf Pea and others for thirty hours in water, and the most of them are coming nicely a few days after being sown, while others from the same bag sown at once have come up very badly. The seed was old in either case. With some old seeds such a plan would be ruinous; but the old-fashioned practice as respects the Pea, of soaking the seeds some hours before sowing, is worthy of more general adoption. All these were showing the radicle or young rootlet before being sown, and the Pea was swollen to a good size. Many showed no radicle at all, and some that did parted in two when touched, and thus lost the cotyledons or nursing seed-leaves; but the great proportion are now growing nicely, when those sown at once in the usual way from the same bag have rotted so much in the ground, that if left alone there would not have been half enough for a crop. In a day or two—say the 4th or 5th of July, we shall sow our last Peas for the season—such as Bishop's Long-podded Dwarf, and, perhaps, a row of an earlier kind, just to give a chance if the weather is fine at the end of October.

Regulated Melon plants, cut back and pruned where we wished them to produce a second crop. It is of less importance now having strong shoots, as the roots are strong, and when well

watered will soon give vigour enough if insects are absent. Stopped and set blossoms of succession crops and planted out more, and prepared a dung-bed or two for frames for a late crop. The heating matter consisted of nearly equal portions of short grass from the lawn, mixed with the long litter from the stable. These moistened and heated each other. From 20 inches to 30 inches of this mixture were put together, fairly trod and beat, and then 1 foot of leaves that had already done service for early Potatoes was put over them, and then the soil, and enough of heat will be given to give a good start, and a little lining in autumn will keep up the heat that is wanted more than the sun will give. It will be observed that the covering of leaves is the great regulator.

Trained and stopped Cucumbers and Marrows under hand-lights and other lights soon to be taken from them. I feel convinced now that many forms of Cucumber disease are owing to a sour, though a fresh well-aerated soil. I did not like the soil at my command for general purposes, but just then could not well manage to encroach on the sides of the highway, our favourite reserve for a fresh supply. Cucumber plants growing in a compost, of which our general heap formed a part, were beginning to show traces of the leaf curling as it did last year, and as we had plenty they were pulled out. Three lights near them, grown in soil scraped chiefly in spring from a ridged-up piece of ground in the kitchen garden, mixed with a little well-aerated leaf mould, have borne profusely and are in fine health. This general heap was obtained from sods paired off a meadow and now nicely decomposed and friable; but the outsides besides grass have a fair proportion of Sorrel growing upon them. The superior health of those grown chiefly in common kitchen-garden soil is another proof that such soil well aired will grow all common plants well, whether in pots or out of them. The above heap of decomposed turf chiefly seems to answer many things extremely well, though it does not seem to suit Cucumbers. Melons are much at home in it. Last season I never had better Melons. Cucumbers beside them were very inferior, and similar soil constituted the groundwork of both, though that for Cucumbers was much lighter in texture.

Some one may ask, Why use such soil? Why not get soil or turves from upland pastures, not likely to have acid enough to foster such plants as Sorrel? Ah! why not indeed, except that nine gardens out of ten must make the best of what they can get, and not what they would wish to have? I know some hundreds of acres where the top sod is full of fibres as scarcely to be torn asunder by the hand, and held to the nose is as sweet as a nut, and to the eye is almost as pretty as a "nut-brown maid," but I have never yet been able to coax a bit of it into my possession. I must get to the roadsides again, even though that gives almost the certainty of plenty of weeds to pull and pull again; and may occasion a confab with some road-surveyor, who will at least pretend that he cannot see you are doing him a favour in removing those accumulated mounds and ridges at the sides, that make his well-metalled roads little better than slushy ditches in wet weather.

Removed the covering of leaves, &c., from the Vine-borders. Could not have done it sooner if we would, and would not have wished to do it sooner if we could. Early covering and late removing are the things when the roots are at all near the surface. Will as soon as finished stir the surface soil, so as just to break it, and water with manure water heated to 80° at least, so that the border shall not be suddenly cooled; and in a few hours afterwards will throw a little dry soil over, alike to look neat and to keep heat and moisture in. When the sun gets at its strength, so as to heat the border well, will mulch it slightly with horse-droppings or sheepdung, and the warm rains that may be expected will wash in its virtues. In autumn we will remove the most of the mulching before covering again. We consider the exposing of the border in the hottest part of summer an advantage so far as medium wood and extra fruitfulness are concerned. When the roof of a house is pretty well covered with Vines, those with roots in front outside will generally do better than those planted inside against the back wall, because the sunbeams act more directly on the soil. When the Vines are thin on the roof—say from 4 feet to 6 feet apart, those planted against a back wall will do admirably, as the sun will pass through to the soil, and if the rods or main shoots are trained down the rafter the wood will be extra short-jointed; when the roof is thickly clothed with foliage there are no rods or tables in the house for plants, there will be no prevent to the sun acting on the soil in winter, and the Vines will

they will not grow quite so well in consequence. Our old gardeners knew what they were about when for general purposes, though they planted the Vines inside, the roots were encouraged to go outside, also in a border with a good slope from back to front, so as to catch the rays of the sun. Fine wood, and fine large bunches, may be obtained from plants with roots so deep that the heat of the sun exerts little influence upon them; but for the extreme of fertility, and the extreme of saccharine matter in the fruit, we are prejudiced enough to believe that the roots must be within the reach of the heat of the sun, and be prevented getting too cold at all critical periods—that, in fact, instead of being shaded, the sun should shine freely on the soil in which they grow.

Watered Figs in house, giving air night and day, and a little fire heat in a dull wet day to prevent anything like damping or spotting. If kept too damp or too close, the end of the Fig will begin to ripen, and then to decay, before the fruit as a whole is fit for the table. This is one of those fruits that to have it in perfection can scarcely be sent any distance. I like to see it hang on the tree until it is cracking all over, and the rich juice peeping out in amber globules. Good drainage, abundance of water when swelling, and thorough ventilation when ripening, if a small fire should be made to secure it, and due thinning and stopping the shoots, are the conditions of success. The syringe should only be used early in the afternoons of hot days, so that the leaves are dry before night; in fact, when many fruit are ripening, it is best to lock up the syringe, and merely damp the floor and ground a little when the day is very warm. A skiff from the syringe is apt to make fruit ripening crack on the one side before the other side is soft or ripe enough for use. With moderate care the Fig is seldom troubled with any insects that need washing off.

Thanks to strewing the ground as mentioned sometime ago with soot and lime, we have scarcely noticed the vestige of the presence of a slug in the Strawberry-beds; and covering with nets has kept the Blackbirds and Thrushes at bay, but that has set them in revenge to pilfer the half-ripened Currants and Raspberries, and some means, as rattles and looking-glasses, must be used to save them till we get more nets at liberty. These nets are now got so reasonable, that there need be no complaint among our enthusiastic amateurs, that it is no use growing Strawberries, for the birds will take them all; and then they so love the birds and like to hear their notes on a morning whilst they lie in bed in a half-dreamy, philosophising mood, that they look upon killing them as little better than murder. Well, the nets will keep the bulk, and just leave a few outsiders to your friends the sweet birds, which rough people that have no poetry or romance in their composition, call by the ugly name of vermin! Thanks, too, to a good watering with manure water—the drainage of the farmyard, which I can get, though the manure itself is a too gingerly subject to build hopes upon, the Strawberries in quantity and size have scarcely been surpassed before. A lady who was enjoying a plateful was next to horror-struck when informed that the fine mouthfuls were the consequence of the dirty black water thrown over them. We presume her liege lord hit upon the manoeuvre in order that he might get the lion's share of the spoil. We hardly believe the guid wife has been quite reconciled, though assured the black water was given about the time the plants were in bloom, and that the showers since then had not left a trace of it on the fine fruit. Covered part with Nottingham netting to prolong their ripening. Watered Eltons and Eleanors on a north border just swelling, which will come in late, and be succeeded by Black Prince and Keens' now showing bloom, turned out of pots forced early. Watered Raspberries to swell the fruit well, and syringed all trees against the walls to keep them clean. Pruned and regulated Apricot trees, and shortened and removed the breastwood on Pear trees, &c., trying to keep down all insects not destroyed.

In the flower garden have been very busy with pegging and bush-sticking, as I can scarcely leave a plant without being secured, and be safe from a high wind taking them up by the roots, or at least breaking all the brittle ones to pieces. This occasions much extra labour, but then the plants are comparatively safe in all weathers; and though these twigs are no ornament at first, their seen utility at once gives them the beauty of fitness, and ere long a trace of them will not be seen. Tied up Hollyhocks, Dahlias, and other plants needing strong stakes. Fresh regulated the conservatories, &c., removing Pelargoniums and other plants needing more striking and glowing flowers

than they were worth. Also setting out first in the shade, Azaleas that had bloomed late, replacing with more Pelargoniums, large Fuchsias, &c., training the latter so as to be masses from the pot upwards, and yet show not too much of stiff dressing. A few Ferns and plants with fine foliage, as the Begonias, will be placed on the lower shelf of the north side of the stage for variety, and to dull a little the masses of bloom. Potted other plants to come on in succession; amongst others, Balsams, &c., to be grown in pots. We have been too scarce of plants this season to plant any out of doors, though few things well treated make more handsome bushes in the autumn. What we have potted will come in for house decoration, and we well want strong, bushy, rather dwarf plants. The plants did not get the exact treatment they ought to have had—they stood too long and rather thick in small 60-pots. The strongest of these were put at once into 24's, a few into 16's, and the bulk into 32's, the soil being rich and not at all light. A couple of old frames being at liberty, a slight hotbed was made for them, formed of a foot of grass and straw litter, and another foot of half rotten leaves about the litter and grass. This heated nicely and gently, and the leaves kept down all steam. The pots were plunged in these beds, and air left on back and front in case even a breath of steam should come. The gentle bottom heat, and the air are causing them to grow with great robustness and vigour, so that in a few days more room must be given. The lower shoots have been pegged over the mouths of the pots, and all flowers will be removed for several weeks.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

LEMUN-KIDNEY POTATO.—"W. D." wishes to know the name and address of the person who first introduced the Lemun-Kidney Potato.

VINE LEAVES (*J. S., Solihull*).—The appearance on your Vine leaves is not caused by insects, but merely indicates a vigorous constitution in the plants.

CARROT MAGGOT (*Z. A.*).—The grub that infests your Carrots is the Carrot Maggot. The best remedy is to well work the soil by trenching and manuring, or to mix spirits of tar with sand till well saturated, and apply it to the soil before digging, in the proportion of one gallon to 60 square yards.

PETUNIAS AND BLUE POLYANTHUS (*W. G.*).—Your Petunia flowers were dried too much, and so stuck to the paper in which they were packed that we could not judge them properly, but it appears to be a gay, single flower, with a white ground, and light blue or purple stripes like the one which Mr. Ferguson, of Stowe, exhibited at the opening of the new Horticultural Society's garden. If it is of a good habit, there is no doubt but it will make a fine header, and we think it highly worthy of being so used. If you had put the flowers singly, between folds of the thinnest oilskin, they would have come quite fresh.

SENDING CUTTINGS BY POST (*F. M. E.*).—Many thanks. The cuttings came quite fresh in the oilskin folds. It seems evident that oilskin will preserve flowers and tender cuttings better than any other thing, and in a small tin case Heath cuttings could be thus sent by post to any parts in the three kingdoms.

ONION MAGGOT (*New Subscriber*).—When "the white maggot with a black head" is found in the bulbs of the growing Onion crop, and the leaves yellow, we know of no remedy. The course we should pursue is to sprinkle some guano over the surface of the bed, the ammoniacal fumes from which might prevent the parent fly of those maggots (*Anthomya ceparum*) continuing to deposit her eggs within the leaf-sheaths of the Onion, which she does close to the ground, from May to September. A drawing of the fly, and full particulars concerning its habits are in *The Cottage Gardener's Dictionary*.

ROSES MILDEWED (*A Subscriber*).—Your Roses are mildewed. Dust them with flowers of sulphur, or syringe them with Gishurst Compound.

ORCHARD-HOUSE (*J. L. B.*).—Your shed with boarded sides 4 feet high, if completed by having a span-roof, all of glass, and well ventilated, would do very well for an orchard-house. There is no benefit arising from a heated house in raising early chickens. It weakens them too much. If you heat your proposed "orchard-house" it ceases from being one, and becomes a forcing-house, in which case the sides ought to be glazed; for if you induce growth in winter the great difficulty is to obtain light sufficient to render that growth vigorous.

ROSE LEAVES MILDEWED (*L. F.*).—The yellow fungi in patches on the under side of your Rose leaves, are of the *Uredo Rosee*. Try the effect of dusting them with flowers of sulphur, and give the roots a good soaking with liquid manure twice a week. Mulch over the roots to keep the soil moist.

GRAPES NOT COLOURING (*Charles Edwards*).—Give plenty of air, and if the fruit is much shaded by the foliage, expose it more fully to the influence of the sun.

GREEN GAGE LEAVES BLIGHTED (*F. C., Hants*).—It is only an excessive development of the parenchymous plate of the leaf. A somewhat similar distortion sometimes occurs in over-luxuriant Vines in the forcing-house.

In a more aggravated form, it is the "bilistering" of the leaves of our Peaches and Nectarines on walls.

DESTROYING AWE (*W. W. B.*).—Scatter over their haunt at the foot of the plant guano, or gas lime soaked in the ammoniacal liquor of the gas works.

MR. MARCH'S DESIGN FOR THE TABLE (*W. W. B.*).—We have made arrangements by which we shall be enabled shortly to publish a figure of Mr. March's prize design for decorating the dinner table.

NAMES OF FERNS (*Alethea*).—A red-stemmed variety of *Athyrium filix-femina*; or if with a creeping caudex, *Athyrium asplenifolium*, var. *angustum*. (*Constant Subscriber*).—1, *Adiantum macrophyllum*; 2, *Nephrodium molle*.

NAMES OF PLANTS (*C. F.*).—1, *Geranium columbinum*; 2, *Stachys sylvatica*; 3, *Spiraea ulmaria*. (*M. B.*).—Your Fox-glove flower is not double—that is, there is no multiplication of the corolla; there is merely a deformity, or a flower-bud, growing out of the centre of another flower-bud. Your three plants are *Clematis integrifolia*, *Campanula speciosa*, and *Spiraea japonica*.

FLOWER SHOWS FOR 1861.

JULY 10th. ROYAL HORTICULTURAL SOCIETY. (Rose Show.) *Garden Superintendent*, G. Eyles.

JULY 18th. TOWCESTER FLORAL AND HORTICULTURAL SOCIETY. *Sec.* T. B. Rodhouse, Towcester.

JULY 18th. PRESCOT. *Sec.*, J. Beesley.

AUGUST 9th. BELFAST ROYAL BOTANIC AND HORTICULTURAL SOCIETY. (Plants, Fruits, and Vegetables.) *Sec.*, George A. Carruthers.

AUGUST 14th. PORTSEA ISLAND. *Sec.*, H. Hollingsworth, Southsea.

SEPTEMBER 2nd. HECKMONDWIKE. (Floral, Horticultural, and Agricultural.) *Sec.*, G. Kelley, Heckmondwike.

SEPTEMBER 4th and 5th. CRYSTAL PALACE. (Dahlias, Cut Flowers of other descriptions, and Fruit.) *Sec.*, W. Houghton.

SEPTEMBER 11th. ROYAL HORTICULTURAL SOCIETY. (Dahlias and other Cut Flowers.) *Garden Superintendent*, G. Eyles.

SEPTEMBER 18th and 19th. BRIGHTON AND SUSSEX. *Sec.*, E. CARPENTER.

NOVEMBER 6th and 7th. ROYAL HORTICULTURAL SOCIETY. (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

NOVEMBER 12th and 13th. STOKES NEWINGTON CHRYSANTHEMUM SOCIETY. *Sec.*, W. T. Howe.

NOVEMBER 14th and 15th. CRYSTAL PALACE. (Chrysanthemum Show.) *Sec.*, W. Houghton.

N.B.—Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GRUMBLINGS OF POULTRY FANCIERS.

WE receive many statements and counter-statements from amateurs—some telling us of marvellous success, others complaining of disappointments; it is evident that the age of credulity is not past. Thus, we have seen a letter from a lady, enclosing seventy-two postage stamps, and requiring to be supplied with four warranted Pheasant's eggs, which must be selected to produce a cock and three hens.

P.S.—Each egg to be from a different strain, as they are to breed from next year, and she would not like to breed in-and-in.

Next, an amiable and right-minded man has made up his mind to keep a few fowls, and, being desirous of stooking, he buys a couple of pullets, having previously made up his mind as to the number of their produce both in eggs and chickens. One of them is bent on becoming broody only a few days after receipt, and after laying only a few eggs. He considers this a fair cause of complaint, as the bird has not fulfilled the condition of a profitable animal.

A third complains that his Spanish hens will not sit, and the person of whom he bought them omitted to tell him so. He says he is determined to keep only one sort, and, therefore, asks what chance he has of a breed?

When friends tell us of the drawbacks and tribulations of our common pursuit, we often think of the Inca roasting beside his prime minister, and saying, in answer to the complaints of the latter, "And I, am I on a bed of roses?"

Have we not gone through every phase of the poultry pursuit, and are we not more enthusiastic than ever?

"Sisty," says Mrs. Caxton, for the "lame duck" was not, as some people suppose, an exchange allusion to Caxton, senr.'s, bad speculation. By the way, did you ever notice there are those who cannot see anything in an ordinary point of view. Plots, counter-plots, and conspiracies spring up like mushrooms, and when Thomas slyly squeezes or pinches Phebe as they pass at the dining-room door, such an one will prove it had nothing to do with any affection "him feels for her," but refers to something that has been said or done while they were in the room. When the last-mentioned domestic asks for an increase of wages, the new-fashioned monthly holiday, or objects to clean the dining-room grate, it is not the temporary uppishness of a smart and not badly-disposed girl, but part of a monstrous plot by the employed against the employers. The "lame duck" then, was the way in which the amateurship of Mr. Caxton showed itself, and the love of poultry was hereditary. "Sisty,"

says Mrs. Caxton, "it is too bad; we have neither eggs for the kitchen nor a chicken for the children. I do not care for myself, but a change is absolutely necessary for them, and they tire of mutton, mutton continually." Sixty good-humoured smiles, and after a mental calculation says, "Let me see. There is that Spanish cock chicken, his comb falls a little; there is a Dorking is rather humpbacked." Mrs. Caxton takes these as an instalment, but does not like her children to have deformed things to eat. Then as to eggs. Cook says she has not enough for use; and as for one on the breakfast table, such a thing is never seen. There was plenty of poultry and eggs till Mr. Caxton took to exhibiting and won the prize at Birmingham, and for her part she wished he had never begun. This is one of the tribulations, and should be avoided by a proper supply for the establishment. It is not only politic, but it is profitable very often, to lessen the numbers that are kept, and rather to turn doubtful birds into a present though small good than to allow them to encourage hopes that can never be realised. Lopping combs will not rise, and crooked backs will not straighten with age.

We have treated the subject lightly, but many will admit the truth of the picture and the fidelity of the colouring. It would not only save grumbling, but many a yard would be benefited by the sacrifice of a few of its inhabitants to the "children's dinner."

PROFITABLE POULTRY KEEPING.—No. 8.

(Continued from page 226.)

In the *Poultry Chronicle* for May 7, page 106, a correspondent "E. C. C." calls in question my inferences generally, and takes exception to various items of the balance-sheet given April 23rd, page 70. In redemption of my promise I now reproduce that account, and with each item carried out separately.

I would premise, that throughout the entire series of papers I have been careful to advance nothing incapable of proof, and that I have in fact understated my case; thus possessing an answer to the objector, and encouragement for the inquirer. Mere assertion, however, brings not conviction, so I proceed at once to facts, and ask only "a fair stage and no favour" from those interested in the subject.

That no point urged by "E. C. C." may be omitted, I will take his objections seriatim. He states—

1st. That I make no charge for purchase of original stock.

This misapprehension may arise from the comparatively small amount charged against "Interest," &c. Certainly I was not quite so verdant as to stock my yard from that of any London dealer in fancy birds. I purchased chiefly at a country market town, having a good supply at reasonable prices. Not one hen was over two years old, and the greater number were the previous year's birds. The roosters were two and three years old. The cost was—birds, £18 7s. 6d.; expenses, 8s.; total, £18 15s. 6d. Average price, 2s. 11½d. (nearly) a-head. At five per cent. on outlay, the item interest will stand, 14s. 9½d. (See account).

It will be convenient to take the 2nd, 3rd, and 5th objections together.

2nd. That I make no allowance for filling up vacancies, and ultimately replacing the old birds.

3rd. That no eggs are deducted for sitting, nor for the few requisite for the brood.

5th. That no charge whatever is made for the sustenance of the original stock.

In the balance-sheet I gave 18s. 9d. as the average return from each hen; being the amount of sales of eggs and chickens. And while the pecuniary result is correct, it does not follow that there are no variations in the facts themselves. No one supposes, or instance, that each hen lays exactly 132 eggs, that 120 are old, that she sits on the remaining twelve, and rears exactly seven chickens out of the twelve that may be hatched. (See account.) The actual average return was (within a fraction too small to bring forward), 22s. 1d. per head a-year. (See account.) Thus leaving an ample margin for replacing vacancies in breeding stock, for eggs for sitting (for I gave none to any but very early or very late hatches), and for food for original birds. Eggs for sitting were charged at half the then selling price, and the chief sitting season being when eggs were scarce, the net return did not reach 7d. (See account.)

4th. That no charge whatever is made for the sustenance of the original stock.

incorrect, inasmuch as the dealers called upon me several days in the week. Thus for the five objections; but there is one or two more still to meet.

In page 107, sixth paragraph in first col., "If 'Lewington' can obtain 1d. for each egg taken all the year round . . . he is, indeed, very lucky."

Let the following speak for itself. It is not compiled from my own experience alone, but from that of several poultry keepers.

PRICES OF EGGS IN AND NEAR LONDON FOR THE TWELVE MONTHS.

February to middle of March, 1d. each, 6d. for five, 7½d. for six. December and January, 7½d. for six, to about 20th December; from this to the middle of January (according as the winter may be open or cold), 1½d., 2d., and 2½d. each has been and again will be obtained for new-laid eggs. From the second week in Jan. and into Feb., 1½d. each and 2½d. for two is the usual price.

I have known 1s. given for four eggs in December and January. This is an exceptional case, and I have, therefore, not quoted it as a price.

In the seventh paragraph same page and column, "And now to conclude my remarks with the article of food, which is charged £31 16s."

My published account being credited with the cash returns from each bird only, so was it debited only with the amount of food purchased up to the last lot of chickens being sold. My object was to show what might be done, and I confined my remarks in the earlier papers to eggs and chickens alone. These, however, as my later papers show, are not the chief items of profit in poultry keeping. Much more may be made by fattening fowls and capons. And besides these, there are still other profitable matters—feathers and dung, and the garden crops which the excellent manure obtained from the hen-house is mainly instrumental in producing.

I will introduce the balance-sheet as given at page 70 of the *Poultry Chronicle*, for April 23rd, but with each item carried out separately.

Dr. EXPENDITURE.	£ s. d.	Cr. RECEIPTS.	£ s. d.
To food (purchased).....	31 16 0	By (cash) returns from 100 hens, at 18s. 9d. a-head.....	93 15 0
To proportion of £ s. d. rent and rates 5 8 3			
To loss, 10 per cent. on stock, —4 s. 10 hens at 2s. each ...	1 0 0	*Via, 120 eggs at 1d. 10 0	
To interest 0 14 9		7 chickens at 1s. 3d.	9 9
To management 9 9 0	16 12 0		18 9
By profit—Balance	45 7 0		
	<u>£93 15 0</u>		<u>£93 15 0</u>

I cannot do better than introduce here my account in its entirety.

Dr. EXPENDITURE.	£ s. d.	Cr. RECEIPTS.	£ s. d.
To food (purchased).....	31 16 0	By cash received for sales of eggs and chickens under 13 weeks sold from 100 hens.....	93 15 0
To proportion of rent and taxes.....	5 8 3	By cash for 30 fat fowls, at 5s. each.....	7 10 0
To management* 9 9 0		By ditto for 9 Capons, at 8s. 2s. 6d. each.....	3 12 0
To eggs for sitting 2 10 0		By 35 pullets kept for breeding-stock, worth 2s. 6d. each.....	4 7 6
To loss on stock, 10 per cent., —i.e., 10 hens at 2s.	1 0 0	By 1½ bushels (nearly) onions, 10 bushels sold at 4s.	2 0 0
To interest (live stock) ... 0 14 9		4½ consumed—at 2s. 6d.	0 11 3
To ditto (dead ditto)..... 0 8 6		By feathers 27½ lbs., worth to use certainly.....	1 0 0
To repairs 0 10 0			
To digging and preparing onion-bed, 5s.; seed, 2s.	0 7 0		
To meal, 40s.; bran, 10s.	2 10 0		
To 20 bushels of potatoc from own garden, at 2s.	2 0 0		
To value of dung 0 16 8			
To broken food from house .. 0 0 0			
To vegetables from garden .. 0 0 0			
To 2 acres grass run, and air ad lib.	0 0 0		
By profit—Balance	55 11 3		
	<u>£112 15 9</u>		<u>£112 15 9</u>

It surely must have happened to "E. C. C." to have missed a hen for a few weeks, and for her to return with a fine hatch of possibly fourteen to sixteen chickens, and did such hen cost him anything the time she was away? Decidedly not, and the

* The item "management" stands, as it should, on the debit side of the account; but inasmuch as no money was paid out, the care of the poultry devolving on members of my family, I claim it as profit. Therefore, £55 11s. 3d. added to £56 10s. 10d. equals £112 15s. 9d. or a net profit of £10 10s. 10d.

nearer they are allowed to approach a state of nature in their lives the better. Hundreds, nay thousands, of cottagers' hens rear first-rate broods, and are never—I say it advisedly—are never fed by their owners but in the extreme cold weather. The hens are their own purveyors, and right well do they manage.—LEIGHTON.

BLACKPOOL POULTRY EXHIBITION.

THIS Show was held on the 3rd, 4th, and 5th inst. Although this was the first attempt at holding a poultry show at Blackpool, the effort has been a most successful one, so much so as to far exceed the most sanguine anticipations of the Committee. The only drawback being the annoyance arising from the negligence of the railway company (a most blameable mistake too on their part), in transmitting the pens to Lancaster instead of Blackpool. This, of course, caused both great vexation and delay in the penning of the birds, although by anxious dispatch on the part of the working Committee, when the pens did eventually arrive no absolute impediment to the admission of the public took place, notwithstanding with a less energetic body of officials the consequence might have been the complete upset of all their plans for future Meetings. Surely railway companies should be more careful of avoiding such mistakes, where everything depends entirely on strict regularity. In common justice to the Committee, we feel bound to say not a single bird was at all injured by this unlooked-for mishap. All the poultry after being carefully fed and watered immediately on their arrival, were at once well housed in their travelling baskets until, at length, the show-pens safely reached Blackpool. It was to ourselves somewhat a matter of surprise, that at this unfavoured season of the year for show-fowls, combined with the fact that it was the first Blackpool Meeting, so capital a collection of really first-rate poultry could be got together.

The *Spanish*, *Game*, and *Grey Dorking* classes were unexceptionable, certainly quite equal to any we have witnessed this season. In the former the world-wide-known birds of Mr. Teebay, of Preston, held their own, though run uncomfortably closely by the fowls of Mr. R. W. Boyle, that had been subjected to a very boisterous voyage from Dublin, expressly to enter the lists on this occasion. This hardship, as in the other pens shown by this gentleman, told seriously to their disadvantage. We also noticed many other pens that have travelled even far longer distances to the Blackpool Show, attributable, no doubt, to the very liberal prizes of £3 10s., £1 10s., and 10s., proffered as prizes in the general classes. Such amounts must excite a strong competition. In *Grey Dorkings* the class was of unusual excellence throughout; and we are told the Judge himself admitted so close was the competition, that half a dozen prizes could have been easily awarded with as perfect justice, as the three apportioned by the rules of the Society, to this single variety. The *Game* classes were, like they generally are in the northern counties, not only well filled, but with most extraordinary specimens. It is a remarkable feature of the Show, worthy of especial mention, that though Black-breasted and Brown Reds competed together in several classes, only the latter colour could be found among the prizetakers. The Brown Reds certainly were far the most preferable as to condition, and fully merited the position assigned them; but we confess the second-prize sweepstake cock, a "squirrel-tailed" one, did not meet our views, particularly where so capital specimens were numerous. The *Cochins* classes were excellent. Mr. Stretch, of Liverpool, taking precedence with his Buffs, and second prize with his Partridge-coloured ones. The White Cochins were also worthy of especial mention, and seemed very attractive to the company, as being a somewhat unusual breed in the neighbouring district. The *Hamburgs* generally, and the *Polands* likewise, mustered both numerously and of extraordinary merit. The *Sebright Bantams*, with the exception of Mr. Harvey Dutton Bayley's prize pens, were not good; but the *Game Bantams* were meritorious. The *Malays*, though but few in numbers, were very good. The *Chicken* class was composed of first-rate specimens of both *Grey Dorkings*, *Spanish*, *Hamburgs*, and *Game*.

The *Ducks* generally, were not so praiseworthy as usual.

In *Geese* and *Turkeys* not a single pen was entered.

The *Pigeons* were but few, but many pens of very high character were exhibited. We particularly noticed a pair of as good white Owls as we have seen for some years past.

We are informed the Show was throughout well and fashion-

ably attended, and that its Committee, notwithstanding the present liberal prizes offered, intend to increase their premiums in coming years. These gentlemen seemed determined to go ahead as to their future meetings, and most probably a large increase of entries will be induced by the still more valuable prizes and enlarged opportunities of success that will then be offered. The following is the list of awards:—

SPANISH.—First and Second, R. Teebay, Fulwood, Preston. Third, H. Lane, Birmingham. Highly Commended, R. W. Boyle, College Green, Dublin; R. Teebay.

DORKINGS (any colour).—First, W. Copple, Eccleston, near Prescot. Second, W. Hill, Heywood, near Manchester. Third, Capt. Hornby, Knowsley Cottage, Prescot. Highly Commended, R. W. Boyle, College Green, Dublin; J. Robinson, Vale House, Garstang, Lancashire; W. Copple; T. Smith, jun., Carleton Villa, Halifax. Commended, H. W. B. Berwick, Helmsley, Yorkshire.

COCHIN-CHINA (Cinnamon or Buff, Brown or Partridge-feathered).—First and Second, T. Stretch, Bootle, near Liverpool. Third, Miss V. W. Musgrave, Aughton, near Ormskirk. Highly Commended, C. Felton, Erdington, Birmingham; H. W. B. Berwick, Helmsley, Yorkshire; Miss V. W. Musgrave.

COCHIN-CHINA (White or Black).—First, R. Chase, Mossley Road, Birmingham. Second, W. Dawson, Selly Oak, Birmingham. Third, G. C. Whitwell, Kendal, Westmoreland.

GAME (Black-breasted and other Reds).—First and Third, J. Fletcher, Stoneclough, near Manchester. Second, Miss E. S. Moss, the Beach, Alburgh, Liverpool. Highly Commended, T. Waring, Preston. Commended, T. Venn, Coventry; J. S. Butler, Poulton-le-Fylde.

GAME (any other variety).—First, J. Fletcher, Stoneclough. Second, Miss E. S. Moss, the Beach, Alburgh, Liverpool. Third, T. Waring, Preston. Commended, W. Dawson, Selly Oak, Birmingham.

BANTAMS (Game).—First, T. Waring, Preston. Second, M. Turner, Preston. Third, H. Shield, Northampton. Commended, G. C. Whitwell, Kendal, Westmoreland.

BANTAMS (Gold or Silver-aced).—First, T. H. D. Bayley, Ickwell House, Biggleswade, Bedfordshire. Second, E. Fielding, Lord Street, Rochdale. Highly Commended, T. W. Hill, Heywood, near Manchester. Commended, T. W. Hill.

BANTAMS (any other variety).—First, withheld. Second, T. H. D. Bayley, Ickwell House, Biggleswade, Bedfordshire.

POLANDS (any variety).—First and Third, J. Dixon, North Park, Bradford. Second, H. Child, jun., Sherborne Road, Birmingham. Highly Commended, C. J. Samuels, Victoria Park, Manchester.

HAMBURGHS (Golden-pencilled).—First, J. Munn, Heath Hill, Stacksteads, Manchester. Second, H. Child, jun., Sherborne Road, Birmingham. Third, Messrs. Carter & Valiant, Poulton-le-Fylde. Highly Commended, R. Parkinson, Market Place, Poulton-le-Fylde. Commended, J. Smith, Sutton, near Macclesfield.

HAMBURGHS (Silver-pencilled).—First, J. Martin, Claines, Worcestershire. Second, J. Munn, Heath Hill, Stacksteads, Manchester. Third, W. H. Kerr, Elm Villa, Worcester.

HAMBURGHS (Golden-spangled).—First, H. W. B. Berwick, Helmsley, Yorkshire. Second, H. Carter, Upper Thong, near Holmfirth, Yorkshire. Third, S. H. Hyde, Taunton Hall, Ashton-under-Lyne. Highly Commended, J. Robinson, Vale House, Garstang, Lancashire; H. Belden, Park Cottage, Bradford; N. Marlor, Denton, near Manchester. Commended, R. Tain, Driffield.

HAMBURGHS (Silver-spangled).—First, J. Robinson, Vale House, Garstang, Lancashire. Second, J. Dixon, North Park, Bradford, Yorkshire. Third, J. Kay, Central Beach, Blackpool. Highly Commended, R. Teebay, Fulwood, Preston; H. Carter, Upper Thong, near Holmfirth, Yorkshire. Commended, J. Fielding, Newchurch, Rossendale.

MALAYS (any variety).—First, C. Ballance, Taunton, Somerset. Second, J. Dixon, North Park, Bradford, Yorkshire.

GAME CHICKENS.—First, J. Fletcher, Stoneclough, near Manchester. Second, J. S. Butler, Poulton-le-Fylde. Highly Commended, R. Parkinson, Market Place, Poulton-le-Fylde; T. Wilkinson, New Gate, Holmfirth. Commended, Miss E. S. Moss, the Beach, Alburgh, Liverpool.

CHICKENS (any other breed).—First, Capt. W. Hornby, Knowsley Cottage, Prescot. Second, J. R. Rodbard, Aldwick Court, Wington, near Bristol. Third, J. Harrison, Central Beach, Blackpool. Highly Commended, Messrs. Hull & Parkinson; J. K. Fewler, Prebendal Farm, Aylesbury; J. Munn, Heath Hill, Stacksteads, Manchester.

DUCKS (Aylesbury).—First, Second, and Third, J. K. Fowler, Prebendal Farm, Aylesbury.

DUCKS (Rouen).—First, withheld. Second, Mrs. J. Alston, Bispham, near Fleetwood. Third, J. K. Fowler, Prebendal Farm, Aylesbury.

SWEEPSTAKES FOR SINGLE COCKS.

GAME (any variety).—A Silver Cup, value £5, the gift of the Society, and a third of the Sweepstakes after deducting expenses.—First, J. Fletcher, Stoneclough, near Manchester. Second, W. M. Grimshaw, Pendle Forest, Burnley. Third, Miss E. S. Moss, the Beach, Alburgh, Liverpool. Highly Commended, J. Fletcher; Miss E. S. Moss; J. S. Butler, Poulton-le-Fylde. Commended, A. Hampson, Boulton-le-Moors; Capt. W. Hornby, Knowsley Cottage, Prescot.

SPANISH.—Prize, R. Teebay, Fulwood, Preston.

DORKINGS.—Prize, H. W. B. Berwick, Helmsley, Yorkshire.

COCHIN-CHINA.—Prize, C. Moore, Poulton-le-Fylde. Highly Commended, J. Harrison, Central Beach, Blackpool. Commended, Miss V. W. Musgrave, Aughton, near Ormskirk.

HAMBURGHS (Gold or Silver-pencilled).—Prize, J. Smith, Sutton, near Macclesfield.

HAMBURGHS (Gold or Silver-spangled).—Prize, C. W. Hall, Poulton-le-Fylde.

BANTAMS (any variety).—Prize, T. H. D. Bayley, Ickwell House, Biggleswade, Bedfordshire.

PIGEONS.—*Carriers*.—First, H. Child, jun., Sherborne Road, Birmingham. Second, C. Felton, Erdington, Birmingham. Highly Commended, H. Yardley, Market Hall, Birmingham; G. Goore, Algburth, near Liverpool. Commended, D. Thwaites, Rock Ferry. *Tumblers* (any variety).—First, H. Child, jun., Sherborne Road, Birmingham. Second, J. Percival, Harborne, near Birmingham. Highly Commended, H. Yardley, Market Hall, Birmingham. *Trumpeters*.—First, F. Key, Beverley. Second, J. Percival, Harborne, near Birmingham. *Dragons*.—First, C. J. Samuels, Victoria Park, Manchester. Second, H. Child, jun., Sherborne Road, Birmingham. *Owls*.—First, D. Thwaites, Rock Ferry. Second, H. Yardley, 30, Market Hall, Birmingham. Highly Commended, F. Key, Beverley. *Jacobins*.—Prizes withheld. *Any other variety not before named*.—First, T. Wareing, Preston. Second, H. Child, jun., Sherborne Road, Birmingham. Commended, R. W. Boyle, Dublin.

FOR THE TWO SMALLEST BANTAM HENS IN GOOD CONDITION.—Prize, R. Tate, Driffield.

The Judges were Mr. Samuel Foulds, of Chowbent, for all the Game classes; and Mr. Edward Hewitt, of Sparkbrook, Birmingham, for every other remaining variety of poultry.

SICKNESS AMONGST POULTRY.

WE hear of much illness among poultry, and often of an inexplicable character. Whole yards of strong adult fowls are taken in a night and seem blighted; their combs shrivel, their feathers become loose, and every semblance of condition disappears. Nothing saves them but the free use of stimulants.

Can any of our readers give us information, or help us in any way? Few die from the attack, but they are long in recovering the effects of it.

THE CANARY AND THE BRITISH FINCHES

(Continued from page 229.)

THIRD ORDER—BUNTINGS (EMBERIZÆ.)

1.—THE CORN OR COMMON BUNTING (*Emberiza miliaria*).

German, Der Grauammer. *French*, Le Poyer.

THE Common, Grey, or Corn Bunting, also known as Bunting Lark, Bull Lark, and Greyhead, is the largest of our British Buntings. It is generally distributed throughout England, and remains all the year; it is as large, or a trifle larger, than the Skylark, which bird it much resembles in colour, and with which it is often caught and sold: to which circumstance Skakespeare alludes.

The beak is rather deep, somewhat conical in shape, and flattened at the sides; the upper mandible is rather slighter than the lower, and darker in colour, and in the roof of the mouth is a knob or projection, which is a distinctive mark of the Bunting tribe. In plumage it is of a greyish-brown above, and dingy whitish beneath; the back is marked with dark brown spots, and the breast is also spotted.

The nest is usually placed in grass near the ground, the eggs resemble the Yellowhammers', but are rather larger. The young leave the nest before they can well fly. They resemble the old birds, but are a little lighter; they may be easily reared on a paste of bread, egg, and crushed hempseed.

Mr. H. Stephens, in his "Book of the Farm" says, "the Corn Bunting feeds wholly on corn." I am sorry to see such an error in natural history in an otherwise excellent and valuable work; on the contrary, the Bunting feeds almost entirely on insects, as small beetles and their larvæ, earwigs and caterpillars, &c., in the destruction of which they must render much valuable assistance to the cultivator of the soil; and it is only in autumn or winter, when unable to find their natural food, that they are driven by hunger to eat grain, among which, grass seeds and oats are their favourites. In confinement they may be fed with any seed, oats and millet, with, occasionally, a little hempseed; but, being deprived of their natural insect food, are rather tender. I never knew them to eat any green food in confinement, but if a mealworm or caterpillar were put in their cage, they favoured it with evident relish.

Knapp has accused this species of being a great store of grain, drawing out the straws one by one, and leaving the grain that might be left in the ears; and further in placing these straws regularly round the base of the stack. I do not doubt but that he might have seen the Buntings searching about the stack for food, and there a bird might pick up an ear and fling it down, or a straw hanging down, but to suppose that they could draw out the grain, is giving them too much sense in the first place. I am, Sir, your obedient servant, J. H. B. B. B.

stack was not properly thatched; but to imagine that the birds would place the straws regularly round the base of the rick, is, I think, taxing our credulity too far. It reminds me of an account which Mr. Stephens also quotes respecting Wood Pigeons—namely, that they convert their wings into flails, and so thrash the grain before they eat it. Ought they not to carry it first to the barn? Now, probably, this accurate observer whom Mr. S. honours by quoting, had seen some young Pigeons following their parents and flapping their wings after them to be fed, as is their habit. This acute observer, knowing more about flails than Pigeons, actually mistook the Pigeons' wings for flails. His next discovery will, very likely, be that the Pigeons in his neighbourhood have started a limited liability company to thrash the farmers' corn, they to have the grain, and the farmer to get the straw as his share; indeed, birds are become so wise, and observers so credulous, that we need not be surprised at any wonderful story in these advanced days.

But, to return to the Bunting; these birds are considered very excellent eating, and are often mistaken and eaten for the true Ortolan, being of the same tribe. They prefer the open country to the wooded district, and frequent arable and pasture land, where the cock bird may be seen perched on a bush, the top of a thistle, dock, stone, or large clod, and singing his sprightly, but harsh song, *Tick, tick, ferrickter ree-ee-ee-ee*, which is frequently repeated at short intervals in a rather grating key, which, Bechstein says, has caused them to be sometimes called stocking-weavers in Germany. They quiver or shake their wings as they fly, and during the pairing-time the cock often lets his legs hang down in flying from one perch to another, similar to the Butcher Bird.—B. P. BRENT.

(To be continued.)

AYRSHIRE APIARIAN SOCIETY AND MR. TAYLOR.

MY attention has been directed to an article in THE JOURNAL OF HORTICULTURE for April, signed "A RENFREWSHIRE BEE-KEEPER," in which he says "that should Mr. Taylor, before publishing another edition of his standard work, indulge in a tour through this county, making the acquaintance of some of the leading members of the Ayrshire Apian Society," &c. In the name of said Society, I beg leave to assure Mr. Taylor that, should he visit Ayrshire, he will receive a hearty welcome, and anything noteworthy in our system of management will be most willingly shown him. Our Show takes place in August (the day is not yet fixed but I will send due notice to this Journal) when we shall be glad to see any apianians interested in seeing a sample of our work.

Our system is not general over the county of Ayr, but the parishes of Mauchline, Kilmarnock, Kilmaurs, and Stewarton, are the best to see the box system of raising honeycombs.—JAMES LUNGLAND, Chairman, Ayrshire A.P.S., Bee Bank, Kilmarnock.

LIGURIAN BEES IN SCOTLAND.

I AM glad to be able to give you a favourable supplement to the paragraph which appeared in No. 13 of THE JOURNAL OF HORTICULTURE in reference to my Ligurian bees. It is there stated that my hive had swarmed a first time on the 4th of June, a second on the 12th. It also swarmed a third time on the 19th. This third swarm was a very fine one, as it weighed 3 lbs., so that now I have four hives in fine working order, one of which, through the kindness of the manager of this branch of Messrs. Hogg and Wood's Nurseries, has been placed in the nursery ground adjoining the station, where they may be seen at work during the summer. I may state that I have another young Ligurian queen at the head of another hive not yet swarmed; but I also expect a swarm off it in a short time if the weather is favourable, which will be a further accession to my stock.

I regretted to see "B. & W.'s" unsuccessful attempt to introduce the Ligurian queens; their failure, without doubt, was attributable to their being irritated whilst they were in the act of stinging, as I should have serious doubts if a hive would receive a portion of their own bees after a few minutes' separation, and returned to them the same way, scented with anything offensive, such as the smell of the queen.

Should you wish to know more the time is now

takes to come to maturity, from the egg to her emerging from the cell?—J. S., *Dunstable, N. B.*

[A queen bee generally takes sixteen days to arrive at maturity from the time the egg is laid. Climate, however, is not without influence. In California the period is shortened to fourteen days; whilst in this country, towards the end of an unfavourable season, we have known it protracted to nearly twenty days.]

BEE FOOD.

THE communication from your esteemed correspondent, "AN OLD APIARIAN," on the subject of a substitute for the natural food of bees, which appeared in the last Number of THE JOURNAL OF HORTICULTURE, leads me to state my own experience on this subject.

The mixture I administer to my bees is simply lump sugar and water, in the proportion of 6 lbs. of sugar to 4 lbs. of water, boiled for a minute or two. This mixture costs about 3½d. per lb., with sugar at 6d.; or 3¼d. per lb. if a darker quality, at 5½d., be made use of.

Last autumn I gave my bees more than three hundred weight of syrup, made in the above manner, and I have no hesitation in saying that they did quite as well as if fed upon honey. Having repeatedly formed stocks in autumn by driving condemned bees, and carried them safely through the winter upon syrup alone, I can recommend it as an excellent substitute for honey in bee-feeding, whilst it has this advantage over sugared ale, treacle, and such like compounds, that it is a perfectly pure syrup which will never become offensive, or injure the combs in which it is stored.—A DEVONSHIRE BEE-KEEPER.

THE HONEY BEE.

By F. H. MINER.

(Concluded from page 248.)

A QUICK eye, instant decision, rapid action, intelligent assistant, and some experience, are necessary in these cases. These catchers are unnatural, and to be used only in emergencies. If first swarms are four or five rods apart—they are not apt to unite; second swarms are more likely to mix. If a swarm is nearly settled before another starts, they may be secured as follows:—Make some light oblong boxes (as the cluster usually takes this form) of thin stuff, joints 1½-inch apart; convenient handles at the bottom, and a piece of cloth fastened to one edge, to cover the mouth. I sometimes hive five or six swarms from a limb before they stop coming. If there is difference enough in the starting to keep the queens apart, each with a majority of her own bees, a little mixing makes no great difference. The queens are anxious to keep with the swarm, and usually come immediately to the cluster. If another swarm begins to alight, shake them as completely as possible into the box; throw over the cloth, set aside and cover with a sheet. The few remaining bees attract the next swarm, which secure in the same way. If two start at once near enough to be likely to come together, put a catcher over one of them. Look occasionally to see if your boxes all have queens; they may be set near each other till this is ascertained. If any are missing divide the bees between your lightest swarms, always remembering that first swarms coming out with an old queen will not accept a young one. Be very careful not to injure old queens in hiving; better lose six young ones than an old one—you have plenty to supply their place. Never hive two first swarms together; throw down a sheet, set around the edges five or six boxes, and shake the bees in the centre. As they spread out, draw back some of the boxes and shove up others, that each may get an equal amount of bees. If you happen to see a queen go into one remove it a little. If you succeed in getting them apart, divide the bees between them. They may be attacked as they are strangers to part of the bees. To avoid this danger, examine the cluster with the feather end of a quill; secure the queens and introduce them to the bees in cages. When a queen is attacked pour water on the little bunch of bees. A few lessons will cool their combativeness; they are not apt to attack unless the large majority are strangers. When the rush is over, hive your bees and set them on the stands—the sooner the better. If a first swarm loses the queen, set a light swarm with a fertile queen in place of the old hive; cover the old hive and those adjoining with sheets. They will enter the new hive, and having lost their hive as well as their queen in their alarm, they seem to forget her

or lose their combativeness, and accept the new queen. If they could be made to accept an unimpregnated queen it would not be desirable—Mr. Quimby's opinion to the contrary notwithstanding. I disregard all human authority where it comes in conflict with the infallibility of Nature.

First swarms are large, make comb rapidly, and if four or five days should intervene before the queen was impregnated, and two days more before she begins to lay, the hive might be nearly filled with comb and honey, to the exclusion of brood. Most of the old bees come out with the first swarm, and, dying rapidly, render it less valuable. Give them the old queen, or a fertile one—they construct workers' cells three times as fast as they would be vacated in the old hive. She pre-occupies them with brood to recruit the wasting numbers. Feeding this brood employs the bees and prevents their occupying the comb with honey to the exclusion of brood. The combs in the old hive are partly filled with honey and pollen—the rest with eggs and brood in all stages. The bees are young, and it will be three weeks before the part occupied with brood is vacated; some time before this the queen will be fertile.

PROTECTION.—A piece of green babinett to cover the face, so fitted as to be thrown over the head when not needed, as all obstructions injure the eye. A bee dress should have a smooth surface. The loss of queens does not occur usually till there are plenty of young ones in after-swarms and old hives.

For cages punch the pith out of a piece of Elder or Ash 4 inches long; cut a slit in the side so narrow that a queen cannot wedge her head in; put a staple in each end of the tube, which must be so small she cannot sting herself. Take a piece of transparent horn, one end to receive the cage, and the other cut square. Where there is more than one in the same swarm, then they may be secured as they appear on the lighting-board, by setting the horn over them; take out the cage, put in another and repeat, or with the feather end of a quill they may be found after lighting, and taken by the wings. Where there is more than one queen in the same swarm, they are allowed to kill each other after hiving. Where different swarms are hived together, each having a preference for their own queen, endeavour to smother the stranger, if their own is present. If a part of the bees belong to a first swarm, and have not a fertile queen, they are apt to leave. If a swarm has lost the queen, introduce one in the cage—the next day liberate her; but I prefer in doubling after-swarms to hive the surplus queen with a few of their own bees, in a honey cap, till they are fertilised. During the alarm that succeeds the loss of a queen, slip them in the chamber; the risk is then over. If you have no queen, set a swarm beside them, raising each hive that the bees may communicate. They hope for a visit from the queen, and continue work till you can furnish one.

UPWARD VENTILATION is now adopted to keep the bees dry. Can we keep an animal organisation—one-fifth of which is water, and which breathes the air that condenses and distributes the rains of summer and floods of spring, so dry it won't freeze? A man walking in the open air is pretty well ventilated, but his eye-lashes and whiskers may be loaded with ice. To keep the frost out, keep the heat in; a hole at the top lets it escape. The vapour created by the functions of life will condense, precipitate and congeal in the presence of cold. Heat carries it off in an imperceptible form. Give them plenty of air. The oxygen maintains the vital fire, and when excluded the coldness of death comes rapidly over them, even in summer. I have just examined some forty hives near me; five holes in the top of each were secured with wire cloth. The bees had stopped nearly all with propolis. Inch holes in the side were also covered—none of these were stopped by the bees; some had been closed with paper—all had holes at the bottom. On examination every hive which had no opening at top or side was dead, nine in number; those that had very little were partly dead. A hole at the bottom does not vitalise the air in cold weather. Last winter the same man closed the sides and bottoms of twelve hives standing in a house made for wintering, leaving openings at the top. Eight of the twelve died. Water is the great element of animal life. They breathe water, drink water, are water, and when burned a few ashes only remain. It is the universal solvent by which food is fitted for the organisation—the purifier which carries off the worn-out parts and maintains almost every function. In very hot or very cold weather, when the air is the driest, and we breathe less, we must drink more. The cold that confines the bee provides for its necessities in the condensed vapour in the lower parts of the hives, advancing or receding according to the temperature. The summer shower does not injure the bees.

It is only as a conductor in connection with the cold that invades our unnatural hives, that it is dangerous.

But I have run the length of my line, and have not found the bottom of the ocean. I suppose the Creator understood the relations and properties of matter, and am satisfied humbly to copy the pattern.

OVERSTOCKING.—There are within three miles of me about five or six hundred swarms, besides forest bees. My own, the largest lot 200, and those nearest them, have not done as well as small lots with less competition. If I had taken away my after-swarms instead of depending on Mr. Langstroth's statements, it would have made a wide difference. I must divide this spring. The difficulty of keeping swarms apart is sufficient reason to limit an apiary to 100 stocks. Feeding is apt to create excitement; all the stocks are soon on the alert, some trying to steal and some to defend. Weak swarms, like poor cattle in the spring, are voracious and uncertain, but should not be allowed to starve. I prefer feeding sealed honey either at night or in the cellar. The 20th of last May, I had a number of swarms desert their hives, leaving brood. I had fed them carefully till the apple and cherry blossoms were out, and supposed them safe. A little frost and wind intervening caused the mishap. Alas for the flowery days when—

Spring came like a laughing girl,
All decked in glossy green,
Fit for a bridal tour,
In garlands bright and sheen.

The sun, that glorious wooer,
Shone on the Maiden Queen,
Each bud became a flower,
Each flower a fruit was seen.

But now she loiters mournfully,
Like some deserted queen,
Stripped of the gauze and drapery
That rustled in her train.

And where the wild deer bounded free,
Now cattle graze the plain,
Each rising flower is nipped away,
Nature looks bald and tame.

If the winter of my years had not frozen over the dancing streams of hope, I would build an ark for my bees, and taking to the Father of Waters, visit the green slopes and flowery plains of the North in summer, floating down to the sunny glades and orange bowers of the South in winter. The short, light winter, the early swarming, the long gathering season, the unbroken succession of flowers, the fresh range, with the practice of artificial divisions in moveable comb-hives, would make it a lucrative business, while the change of scene might satisfy a gipsy.

WINTERING.—All animal organisations need exercise to quicken the circulation, expel impurities, stimulate the appetite, and renew the body. Bees, therefore, when the air is warm need liberty for action to expel their fæces; they eat more, but are better able to endure the vicissitudes of spring. They need pure air; the cellar, therefore, is not a good place, but above all they need heat, and to me it is a choice of evils—heat is life and cold is death. I live on a bleak hill on the naked prairie, where the wild winds revel with a western violence unknown in the forest. Even in the cellar I am losing bees with cold in small divisions, out off from the cluster by brood-combs on the side and cold corners; all their instincts at fault, in their unnatural home they remain and perish. If the hive was round, the side-combs would be narrow and rounded to correspond with the hive, and the bee could come to the cluster without going further into the cold. I set them out once, usually in January. They should not be put out unless the air is quite warm (the confinement has made them feeble) and sure to continue so two hours at least. It is natural to suppose that disturbance by stimulating appetite would be injurious in a confined state, but I have not found any trouble on this score.—(*Prairie Farmer.*)

CAUSE OF THE DEATH OF A QUEEN BEE.

I ALSO forward you a result—a caution against what is sure to happen when divided colonies (of bees) come to be united, a great row and one dead aspirant. The unfortunate of "INVESTIGATOR" was pierced to the heart; that is not the case with my queen, as an abdominal injury is the cause of death, and this, according to my observation, is the case nine times out of ten. I have often tried but without avail to find out how the sad event is brought about, whether by battle royal, or by cowardly subject though the trumpet notes of defiance issuing from the queen.

the former; and in that case, as regards mundane affairs and quarrelsome monarchs, it might serve as a good example for them when settling their little differences, seeing that it would save a vast sacrifice of human and innocent life, and as in the case of my bees the community would remain so much the stronger, loyally so.

My last cast came off yesterday, the 27th ult. I united them to a previous cast at 10 P.M., and when I placed the hive on its stand this morning at 3 A.M. the usual fatal catastrophe lay extended upon the cloth to be forwarded to you for scientific observation at your will and pleasure. My bees have now concluded their very good swarming season, for which result I have been waiting in order to continue my papers "How I became an Oxfordshire Bee-keeper."—U. AND O.

SUPERIORITY OF LIGURIAN BEES.

I HAVE refrained from offering an opinion on the merits of Ligurian bees until I had given them such a trial as would put their good qualities to a fair test. Having now had them at work during two seasons, I can confidently pronounce them far superior to the common bee.

I believe the secret of their superiority to consist in the amazing fertility of their queens, which greatly exceeds anything I have ever experienced in the ordinary species; in fact, their fecundity appears almost without limit, and has necessitated the employment of larger hives than I have ever before used.

The following extract from *The Boston Cultivator* shows that the opinions of American apirians coincide in this respect with those of—A DEVONSHIRE BEE-KEEPER:—

"Dr. J. P. Kirtland, of Cleveland, Ohio, in a letter to S. B. Parsons, Esq., of Flushing, Long Island, gives the results of his experience with Italian bees as follows:—

"1st. Their disposition to labour far excels that of the common kind. From the earliest dawn of day to the arrival of evening, they are invariably passing in and out of the hive, and rarely suspend their work for winds, heat, or moderate showers, at times when not a solitary individual of the common kind is to be seen. Two hours each day their labours are extended beyond the working-time of the last-named kind.

"2nd. Power of endurance, and especially of resisting the impression of cold, they possess in a marked degree. Since the Buckwheat, Solidagoes, and Asters have flowered, the nights have been remarkably cold in this vicinity. This low temperature has in a great measure suspended the efforts of the common bees, and they have been eating their previously accumulated stores. Not so with the Italians; they have been steadily accumulating honey and bee-bread, and rapidly multiplying their numbers. They seem to be peculiarly adapted to resist the chilly atmosphere and high winds which predominate in autumn on the shores of Lake Erie.

"3rd. Prolificess they equally excel in. Both my full and half-blooded stocks have become numerous and strong in numbers as well as in stores at this late season of the year, when the common kinds have ceased increasing and have become nearly passive.

"4th. Their individual strength is greater, and this is well illustrated in their prompt manner of tossing to a great distance any robber that chances to approach their hive.

"5th. Their beauty of colouring and graceful forms render them an object of interest to every person of taste. My colonies are daily watched and admired by many visitors.

"6th. Of their moral character I cannot speak favourably. If robbing of weaker colonies is going on, these yellow-jackets are sure to be on hand.

"So far as my experience has gone with them, I find every statement in regard to their superiority sustained. They will, no doubt, prove a valuable acquisition to localities of high altitude, and will be peculiarly adapted to the climate of Washington Territory, Oregon, and the mountainous regions of California."

OUR LETTER BOX.

ONE RUN FOR TWO HOUSES (*Adelaide B.*).—Your proposal to allow the tenants of each house to run into the farmyard for the half of every day alternately, is a usual and good arrangement. In each house having a separate enclosure, 50 feet by 12 feet, you might keep ten hens and two cocks. The house to supply you with chickens and eggs should be tenanted by ten Cochins China hens, Buff, or Partridge-coloured, and two Grey Dorking cocks; take away five of the hens every summer, and supply their place with five early Cochins-China pullets, not the cross-breeds from your own yard. You have then the best of all the hens three years old, and begin with a pullet.

WEEKLY CALENDAR.

Day of M th	Day of Week.	JULY 16-22, 1861.	WEATHER NEAR LONDON IN 1860.				Sun Rises.		Sun Sets.		Moon Rises and Sets.		Moon's Age.		Clock before Sun.		Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	m.	h.	m.	h.	m.	h.			m.	s.	
16	Tu	Saponarias.	29.910—29.816	65—50	E.	·14	3	af 4	8	af 8	19	11	8		5	44	197
17	W	Oxalis.	29.863—29.814	75—45	S.W.	—	5	4	7	8	59	11	9		5	49	198
18	Th	Digitalis.	29.827—29.764	75—50	S.W.	·07	6	4	6	8	morn.		10		5	54	199
19	F	Antirrhinums.	29.680—29.636	70—49	S.W.	·01	7	4	5	8	32	0	11		5	58	200
20	S	Sun's declin. 29° 39' N.	29.819—29.779	72—47	S.W.	·10	8	4	4	8	58	1	12		6	2	201
21	Su	8 SUNDAY AFTER TRINITY.	29.746—29.577	70—47	S.	·26	10	4	2	8	14	3	13		6	5	202
22	M	Lathyrus.	29.771—29.601	70—42	N.W.	·17	11	4	1	8	rises		O		6	7	203

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 74.7° and 51.4° respectively. The greatest heat, 91°, occurred on the 18th in 1859; and the lowest cold, 39°, on the 18th in 1851. During the period 118 days were fine, and on 113 rain fell.

MECHANICS AND MATHEMATICS APPLIED TO GARDENING.



FORWARDS of forty years are now passed since Captain Williamson—who, having passed much of his life in India, we will suppose had become, like its curries, of a temperament rather warm, and like its rajahs rather despotic—wrote thus of agricultural mechanism, and of those for whose benefit it could be employed. "Almost every implement in use is put together by guess, and without the smallest reference to those principles which should guide mechanics of every description. As to the farmers themselves, their ignorance in all that relates to draught, resistance, and friction, may safely be put on a par with their own obstinacy, and with that sullen pride which characterises the generality of our labourers.

Tell the farmer that his plough is badly formed, and he will answer you, '*It suits my county.*' Tell the labourer that it works ill, and he will answer, '*It's the fault of the land.*'

Now, though since that was written the manufacture of agricultural implements has very greatly improved, and the possession of the scientific knowledge which Captain Williamson laboured to impart characterises the makers of the machines and implements exhibited annually at our various agricultural shows, yet we cannot observe such a marked increase of knowledge among those who employ those implements as would justify us in believing that they are competent judges of their comparative excellence. Every farmer knows, for instance, when a plough works the land effectively; but if two ploughs work the land equally effectively, we never met with a farmer yet who could tell which did so with the least expenditure of power, or, in other words, which distressed the horses most.

The same observations apply to the manufacture of gardening implements, and to those who use them. Those implements are more various and more correctly formed than in the days when Captain Williamson wrote; but we do not observe that those who employ those implements understand more clearly than they did fifty years since, the readiest modes of ascertaining which require the least expenditure of labour.

No. 16.—VOL. I., NEW SERIES.

As the gardener is generally deficient in a knowledge of the laws of mechanics applicable to his art, so is he too usually without that knowledge of mathematics which would facilitate much of his practice. We once saw this very markedly exemplified in the attempts to cut out three oval beds upon a lawn, each being required to vary accurately in its proportions relatively to the others. The gardeners were fairly beaten, but the schoolmaster of the village being applied to by the owner of the garden, marked out the three beds without hesitation or difficulty.

We think we can give some information that may serve to remove the deficient knowledge at which we have glanced, not, however, intending to give a general treatise either upon mechanics or mathematics, and we will commence with a few notes upon

THE LEVER.

It must be borne in mind that any inflexible bar or rod placed on a prop, called the fulcrum, for the purpose of raising a weight, is a lever. The handle of a wheelbarrow is a lever, and the axle of the wheel is the fulcrum. The weight, or resistance, to be overcome is the body of the barrow and whatever it may contain, and the power by which that resistance is overcome is the hand and bodily weight of the man. In this instance the resistance is between the hand and the fulcrum.

Pruning-shears, pincers, and sugar-nippers of all kinds consist of two levers, the rivet being the fulcrum of each. The fingers or hands are the power, and the shoot pruned, the nail drawn, and the sugar nipped, are the resistances to be overcome. In these levers the fulcrum is between the power and the resistance.

There are other forms and combinations of levers, but the above are those with which the gardener is chiefly concerned, and we will to them confine our illustrations.

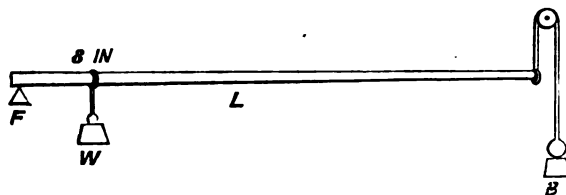
When two men are carrying potted plants upon a handbarrow between them, or when they bear on a pole a tree for transplanting, they employ a lever on the same principle as the wheelbarrow, each man acts as the power in moving the weight, and each man acts as the fulcrum to the other man; the handles of the handbarrow and the pole are the levers; the potted plants and tree are the weights or resistances to be overcome, and they are between the power and the fulcrum.

Now, the force to be obtained by a lever is greatly increased by an increase of its length between the fulcrum and the hand, or power applied, as well as by the nearness of the weight or resistance to the fulcrum. Thus: if 24 lbs. are placed in a wheelbarrow at 8 inches from the axle of the wheel or fulcrum, and the handle of the barrow is 4 feet long, measuring from the fulcrum, then 4 lbs. placed at the extremity of the handle will balance the 24 lbs. But, if the 24 lbs. are placed at 16 inches from the fulcrum, then 8 lbs. are required to

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be placed at the extremity of the handle to balance those 24 lbs. This is proved in the following manner:—

Fig. 1.



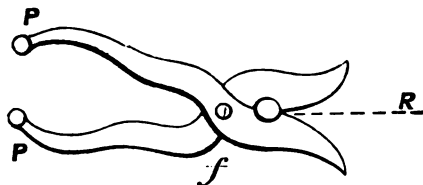
- F The fulcrum.
L The lever, 4 feet long.
W 24 lbs. weight suspended at 8 inches from fulcrum.
B 4 lbs. attached to end of the lever by a string passing over a pulley.

Therefore, in the case of using a pole or handbarrow, if the potted plants or tree weighed 24 lbs., and were placed at w, the man at r would bear 20 lbs. of that weight, whilst the man at b would only bear 4 lbs.

Captain Williamson simplifies this by observing, "When the weight is central, the burthen will press on the two supporters equally; but if it be removed towards one of them, he will find the pressure upon him to be increased in an exact ratio. If the pole be 5 feet long, and the weight is moved to within 2 feet of him, he will sustain three-fifths of the weight, whilst his fellow bearer will sustain only two-fifths of it: hence, men of unequal strength may easily accommodate any weight, borne on a pole, so as to bring their powers to a par."

The case of the pruning-shears may be best explained by means of a diagram.

Fig. 2.



- P P The lever or handles, where the hand or power is applied.
f The rivet or fulcrum.
R The shoot to be cut, or resistance to be overcome.

As already stated, "the force to be obtained by a lever is greatly increased by an increase of its length between the fulcrum and the hand, or power, applied; as well as by the nearness of the resistance to the fulcrum:" therefore, the greatest cutting-power is obtained by pressing together the handles of the shears with the hand at P P, as far as possible from the fulcrum, f, and by having the shoot, or resistance, R, as near as possible to that fulcrum.

The following plain rule is applicable to all cases of leverage:—*Multiply the weight or resistance by its distance from the fulcrum; then multiply the power by its distance from the fulcrum; if the products are equal the power will balance the weight or resistance.*

For example, as in the case of the wheelbarrow, if 24 lbs. be at 8 inches from the fulcrum, these multiplied together are equal to 192; and the lever or handle being 48 inches from the fulcrum, this multiplied by the 4 lbs. are also equal to 192.

(To be continued.)

CONCERNING SOME FERNS.

In the Kew collection *Pteris argyrea* is labelled as a variety of *P. aspericaulis*? Is this so? *P. tricolor* is pretty obviously a variety of the old plant; but *argyrea* far surpasses both in size and hardness, and the hairs on the upper surface of the midrib are present or inconspicuous. It is curious that at all events the three variegated Ferns now in vogue are of one genus. A very beautiful variety of *P. argyrea* is now in the collection of the Kew.

phlebium appendiculatum; and if you place it against the light, the young semi-transparent frond faintly suggests the effect of a stained Gothic window. — Well, yes! You must be of a rather fanciful temperament to see it.

The rosy tints of some Ferns while growing are a nice relief to the general hue of a fernery, and they suggest a contrast with the habit of the denizens of the arboretum, where the red hue is often the flush of decay. The Ferns more appropriately mount a little gay colour on coming out into society, and then subside into their ancestral uniform—it may be a cold or warm tint, blueish, yellowish, or greyish; but it must be green, trimmed, in a few exceptional cases, with a little gold or silver. A peculiarly dark species is the *Platyloma rotundifolia*, which was mentioned by you some time ago as a Fern that delighted in deep shade. Of course you meant deeper shade than its congeners; but this seems to point to another opposition between Ferns and flowering plants, which grow paler in darkness. Do Ferns ever blanch? or is their colour, like certain seaweeds, independent of their share of sunshine? As to the "golden" species, a classical but non-botanic friend inquired, on reading the label on my *Phlebodium aureum*, if that were the "gold Fern." As the leaf happens to have a tint of green with less than usual yellow in its composition, the title seems undeserved. It was given, perhaps, in reference to the sori, which, however, are not more golden than in many other species. One would put up, though, with unexpressive, or even wrongly expressive, names if they were a little handier to write or talk about; and above all if the set of people who, on the strength of a little Greek and Latin learning, are supposed to be botanists, would be content with making one pair of names for a plant. If they would work out a single fact—one minute atom of information about the external requirements or internal organs of the most insignificant species, "it would be something," as Sterne says of the old man's love for his ass; but their perpetual divisions and distinctions (all done in the dark, for nobody can define a genus, or a species, or a variety), puzzle plain people's heads, and make beautiful objects ridiculous by the absurd and ugly names that we must speak of them by. Taking a precedent from what was suggested in Parliament with reference to architects and public buildings, do you think it would improve our nomenclature if we were to hang a botanist or so? Of real information about exotic Ferns we have little enough. Except that there are gradations of temperature, we give them pretty nearly one kind of food and lodging; although many of them, if they could speak, would be found, like Mr. Stiggins, to have some peculiar vanity. Sims' catalogue, which is a very handy book for Fern growers, omits the localities of the exotic species, because "it would not aid culture unless the elevation at which the plant grows was given also." This is so when only such a vague notion can be given as "Brazil" or "North America," which may include equatorial and temperate regions, to say nothing of the set of climates belonging to a range of mountains; but when a small spot on the map can be given, such as Buenos Ayres or Juan Fernandez, the locality would do much to indicate the cultivation.

I see the Horticulturals award a "commendation" to a new Fern—*Lomaria Fraseri*. This, of course, is due to some special properties of the new-comer: a mere numerical addition to the list of cultivated species would be only an encumbrance.

I see also that in the late shows the *Gleichenias* were a prominent feature. Is this distinction gained by fashion, or novelty, or costliness, or difficulty of culture? Surely (with the exception of *flabellata*) their beauty is of a quaint, stiff, skeleton-like character. I fancy a wire-worker would turn out a very good imitation of some of them.

And finally, to come to a practical question. Some of my *Adiantums* throw up fine promising young stems, which rise well out of the soil, and look clear-complexioned and crisp as usual; a day or two after, the head of the new frond discolours, drops of brownish liquor hang about it, it withers and drops. My plants are, as I believe, well drained. What is their complaint? and, as cure is out of the question, how is the disease to be prevented?—T.

[As to *Pteris argyrea* and *P. tricolor* authorities differ. Our own view is that *tricolor* is really a variety of *aspericaulis* (itself included by the "lumpers" in *P. quadriaurita*); while *argyrea* has nothing to do with it. The limitation of species is one of the vexed questions of botanists. Some regard all the foregoing as being included under *quadriaurita*, which is an extreme view. These all belong to one group, certainly, and are closely allied,

no doubt; but we cannot go so far as to regard them as one species. We have never tried to blanch Ferns, but imagine they would become white were light totally excluded. The name "aureum" given by Linnaeus to the Polypodium, now *Phlebodium aureum*, refers, there can be no doubt, to the very large and massive clusters of golden spore-cases—much larger and more conspicuous than in any other species then known. You must remember that while nomenclature is fixed (that is the rule) discovery is progressive, and the most golden of olden Ferns may become equalled or surpassed by more recently discovered plants; but in such cases the name cannot be transferred. That would increase tenfold your difficulty in mastering the names.

Well, now, as to the hard names and the botanists. Those who follow the science know that the governing principle is necessary and sound; some individuals overdo the matter, perhaps, but this is a free age and a free country, and the study devoted to the subject by those persons does not lead them to think they commit any excess. Names are the mere alphabet of science, enabling its votaries to hold communications with each other. If (because you cannot do without them) you use the names botanists employ, you may have the English privilege of grumbling if you please, but you must still use them, or invent some others, which would probably be ten times worse, because they would be less definite.

Lomaria Fraseri has the special properties of being very distinct and really handsome, which are the grounds on which it was commended.

We cannot agree with you about *Gleichenias*, which are amongst the most elegant of Ferns—albeit, with a certain quaintness. True, a wire-worker might imitate them, but then other artists might equally imitate any other set of Ferns, so that this is no disparagement.

We cannot tell what ails your *Adiantums*; but if the soil is in a healthy state we should think they have too much atmospheric humidity, and that in too stagnant a state. It may be, however, that some specific disease has attacked them.—†

ROYAL HORTICULTURAL SOCIETY.

FIRST GRAND ROSE SHOW.—JULY 10TH.

THE great extent to which the culture of this favourite flower—the very queen of all flowers—has been carried, has been amply borne witness to by the result of the two rival exhibitions at the Crystal Palace on the 6th, and this at Kensington Gore to-day. I use the term "rival" in no invidious sense, certainly not in that of opposition; and rivalry, if fair and open, must ever be a benefit. Although held within four days of one another, each was a complete success. A bright day and the numerous attractions of the place brought its 13,000 visitors to the Crystal Palace; while a day equally fair (breaking through the old Chiswick charter), gave its gay and most brilliant assemblage to Kensington Gore. And then what a boon to exhibitors!—in both places the prizes were liberal both in number and value, the arrangements all that could be desired. And although an unfavourable season with its wet and frost had driven several able competitors from the field, still an immense number of blooms was exhibited; and if we succeed in repairing our losses, and if Roses on their own roots are extensively grown, the fairest aspirations of the "Géant" Secretary of the National Rose Show will ere long be realised—the whole conservatory at Kensington Gore filled with the queen of flowers, and Her Gracious Majesty coming to see her fragrant rival.

Having already given my idea of the Crystal Palace Show, and knowing that "D. B." has been "taking notes," I shall leave the general features of the Exhibition to him, and, as florist mad, confine my notes to the Roses, viewed not so much as a decorative flower as in its individual character—how far they merit the approval of the florist, and come up to the conventional (!) idea that he carries in his mind. Viewed as a whole, one may say, I think, that the entries were more numerous at the Crystal Palace, but the flowers were fresher at Kensington; that the nurserymen's class was better represented at the latter, and the amateurs' at the former; and that a larger proportion of newer flowers was to be found amongst the trees on the 10th than on the 6th.

It will be seen on reference to the prize list that the same growers in a large number of cases exhibited at both Shows, though their positions were in several instances reversed. The

new Roses, as usual, excited a good deal of attention, and several boxes of them were shown.

Messrs. Fraser, of Lea Bridge-Road, and Mr. B. F. Cant, of Colchester, took equal first. The flowers were—from the former gentleman, Abdel Kader, very dark, General Washington, a fine well-built flower; Duc de Cazes, dark; Madame Furtado; Princesse Mathilde, a very full and fine flower. These are of 1861. Madame Pauline Villot; Madame Charles Crapelet, a lovely flower, again shown in great beauty, not very full; Le Sénateur Vaisse, I spoke of this as a double Général Jacqueminot, but it is really a perpetual Paul Ricaut; Victor Verdier, and Mademoiselle Eugénie Verdier; Louis XIV., a very dark and fine Rose. From Mr. Cant, La Boule d'Or, Tea, a very fine and deep-coloured flower, deeper than Triomphe des Rennes, N.; Eugène Appert; Madame Charles Crapelet; Victor Verdier; Rubens, Tea; Gloire de Santenay, a very fine Rose; Louis XIV.; Madame Boll; Victor Emmanuel, B.; Duc de Magenta, Tea; Buffon, and General Forey.

Mr. Standish was second (his flowers, though very fresh and even newer in kind, were small), with *Reynolds Hole, again shown in good condition, a most lovely pink, and very clear and bright; *Marguerite Appert, blush white; Eugène Appert; Madam Standish; Triomphe d'Amiens, crimson, very beautifully striped and dashed with deeper crimson shade; André Desportes; Madame Furtado; *John Standish; *Grégoire Bourdillon, a very fine rich Rose; *Comte de Falloux, good; and Reine des Violettes. Those marked thus * are in Mr. Standish's hands.

Mr. Keynes was third with Louis XIV., Madame Furtado, Victor Verdier, Triomphe de Lyon (dark but dull), Vainqueur de Solferino, Sénateur Vaisse, Mademoiselle Bonnaire, Eugène Appert, Madame Eugénie Verdier, Madame Mieliez, Madame Pauline Villot, and Triomphe d'Amiens. Thus Madame Furtado, Sénateur Vaisse, Eugène Appert, and others are evidently holding their ground; but I hope shortly to give more detailed accounts of the new Roses when I have further opportunities of testing them.

Amateurs exhibited in 48, 24, 18, and 12. Mr. Hedge, of Colchester, taking double-first honours; Mr. Corp, of Salisbury, one; and the Rev. Mr. Radclyffe, so well known to Rose growers by his writings, another.

In 48's Mr. Hedge was first. His flowers were—La Fontaine, Bizarre Martre, Charles Duval, Madame de Cambacères, Juno, Jules Margottin, Mathurin Regnier, La Ville de St. Denis, Général Jacqueminot, Madame Vidot, Madame Stoltz, Duc de Trevis, Coup d'Hébé, Narcisse, Souvenir de Leveson Gower, Leo X., Triomphe de Paris, Anna Alexieff, Gloire de Dijon, Baronne Prevost, Shakspeare, Madame Knorr, Madam Hardy, Comtesse de Chabillant, Joan of Arc, Rubens, Oriflamme de St. Louis, Paul Ricaut, Charles Lawson, Victor Verdier, Adolphe Boussange, Princesse Hélène, Adèle Prevost, Baronne Hallez, Vignerol, and Cynthée. Duplicates being allowed in this class, several of the above flowers appeared twice over.

Miss Crawshaw, of Caversham, was second, Mr. John Hollingworth third, and J. Tritton, Esq., fourth.

In groups of 24, Mr. Corp took first prize with a fine stand containing La Fontaine, Madame Knorr, Géant des Batailles, Gloire de Dijon, Jules Margottin, Juno, Souvenir de Leveson Gower, Augusté Mie, Général Jacqueminot, Madame Mieliez, Pauline Lanzeur, Victor Verdier, Mathurin Regnier, Gloire de Vitry, Madame de Cambacères, Boule de Nanteuil, William Jesse, Général Castellane, Madame Vidot, Prince Léon, La Volupté, and Lord Palmerston (ex.).

Mr. Hedge was second, Mr. Worthington and Viscount Maynard equal third, and Mr. Mercer fourth.

In groups of 18, the first prize was awarded to the Rev. W. F. Radclyffe, of Rushton, near Blandford, Dorset, for Eugène Appert, Paul Duprez (a fine bloom), Gloire de Dijon, Sir John Franklin (an extra fine bloom), La Ville de St. Denis, Triomphe des Rennes, Gloire de Santenay, Souvenir de la Reine de l'Angleterre, Géant des Batailles, Louis XIV., Lord Raglan, Mrs. Elliott, Comtesse de Chabillant, William Tell, Solfaterre, Général Jacqueminot, and Louis XIV.

Mr. Moore, of Woking, Surrey, second, Mr. Hedge third, and Mr. Tritton fourth.

In groups of 12, Mr. Hedge and Mr. Corp were equal first. The flowers in Mr. Hedge's box were Gloire de Vitry, Souvenir de Leveson Gower, Juno, Pauline Lanzeur, Victoria, Gloire de Dijon, Général Jacqueminot, Comtesse de Chabillant, Evêque de Nîmes, Vignerol, Madame Knorr, and Lord Raglan.

Mr. Helyar was second, Mr. Tritton third, and Mr. Child, of Little Eaton, fourth.

The contest amongst nurserymen was very sharp indeed; and after a very severe and close scrutiny on the part of the Judges, ended in Hertfordshire being put out of the field, and the honours being carried off by more distant growers. Some of the blooms in these stands were very fine considering the season; and some indeed would have been fine in any season, and would have satisfied the most fastidious taste.

In 49 varieties Mr. Cranston, of Hereford, was first with Mrs. Rivers, Duc d'Orleans, Lælia, M. Jongneux, Senateur Vaisse, General Washington, Anna Alexieff, M. Vigneron, Gloire de Dijon, Madame Falcot, Madame Hector Jacquin, Mademoiselle Bonnaire, Louis XIV., Reine Mathilde, Léon des Combats, Louis Odier, Anna de Diesbach, Alexandrine Bachmetoff, Sir Joseph Paxton, Prairie de Terre Noire, Comtesse de Chabillant, Souvenir de la Reine de l'Angleterre, Madame de Cambacères, Oriflamme de St. Louis, Madame Knorr, Acidale, Prince Léon, Princesse Mathilde, Charles Lawson, Général Jacqueminot, Madame Boll, Coquerelle, Souvenir de Montceau, Common Moss, Marie Portemir, Louis Chaix, Reine des Violettes, Duchess of Norfolk, and Prince Imperial.

Mr. B. F. Cant, of Colchester, was second, and Mr. Keynes third. Extra, Mr. Francis, Mr. Hollamby, Messrs. Paul & Son, and C. Turner.

In the large class of 96 varieties, Mr. Mitchell, of Piltown Nurseries, Sussex, was first; Mr. Keynes, of Salisbury, second; and Mr. Hollamby, of Tunbridge Wells, third; Messrs. Paul and Son fourth; and Mr. W. Paul extra.

In 24, three trusses of each, Mr. Keynes was the winner, with some very fine blooms of the following:—Victor Verdier, Madame Vidot, Triomphe des Beaux Arts, Gloire de Dijon, Madame Pauline Villot, Anna Alexieff, Virginal, La Ville de St. Denis, Lord Raglan, Duchesse de Cambacères, Mathurin Regnier, Eugène Appert, Souvenir de la Malmaison, Général Jacqueminot, Madame Miellez, Dr. Bretonneau, Triomphe de Paris, Jules Margottin, Evêque de Nîmes, Prince Léon, Comtesse de Chabillant, Madam Rivers, and Madame Knorr.

J. & J. Fraser were second; Mr. Cranston third; and Mr. Laing, of Twickenham, fourth; Mr. Cattell sixth; and Mr. Cant extra.

In 24 single blooms, Mr. J. Keynes, of Salisbury, was first, Mr. Charles Turner of Slough, second. Mr. Keynes' collection comprised Boule de Nanteuil, Evêque de Nîmes, Souvenir de Malmaison, La Fontaine, a large, fine, showy Rose; Gloire de Dijon, Victor Verdier, Juno, Prince Léon, Mathurin Regnier, Comtesse de Chabillant, Gloire de Vitry, Virginal, Madame Hector Jacquin, Madame Vigeron, Jules Margottin, Madam Rivers, Madame Knorr, Dr. Bretonneau, Alexandrine Bachmetoff, and Queen of Denmark. Mr. Turner's collection, contained Comtesse de Chabillant, Louis XIV., Anna Alexieff, Virginal, Leveson Gower, Augusté Mic, Léon des Combats, Viscomtesse de Cazes, Baronne Prevost, Duke of Cambridge, Senateur Vaisse, Victor Verdier, Pauline Lanzeur, Madame Damage, Jules Margottin, Gloire de Dijon, Duchess of Norfolk, Comte de Paris, Eugène Appert, General Simpson, Mademoiselle Therese Appert, Général Jacqueminot, Pius IX., and Gloire de Vitry.

Moss Roses were shown in two collections by Messrs. Paul and Son and Mr. Hollamby—the former was placed first, with a nice collection of most of the kinds in cultivation.

It will be seen by referring to the lists thus given how very large a proportion of the flowers shown are Hybrid Perpetuals. This one was hardly prepared to expect. Death had been so much more busy amongst them than amongst the summer Roses that I thought the latter would come out more strongly. It seems, however, that they are, generally speaking, a doomed race. Some few varieties will maintain their ground, but year by year we seem to be getting more and more into the two classes of P.'s and Teas. Bourbons are rarely shown, and so indeed are Noisettes.

Amongst Miscellaneous Objects there were exhibited collections of fine-foliated and ornamental plants from Messrs. Lee, of Tammer-smith, and Messrs. Veitch, of Chelsea and Exeter; several very large boxes of cut Roses by Messrs. Hollamby, Veitch, Standish, Mitchell, and Radclyffe; Phloxes by Paul and Son; Verbenas, Picotees, and Carnations, by Mr. C. Turner, of Wough. The Verbenas were St. Margaret, a very old but useful and, Grand Eastern, very large, Bellona, Madame Herman, and a fine strong, pillar Rose one-half the world

Princess Mary of Cambridge, Garibaldi, and Mary. The same grower also exhibited well grown and excellently bloomed plants of the following new *Pelargoniums*:—Tradescendant, Ariel, Leviathan, Beadsman, Lord Clyde, Rembrandt, Norma, Bacchus, and Mars.

Mr. Standish, of Bagshot, sent his unique collection of variegated hardy plants from Japan; and Mr. Leach some beautifully bloomed plants of *Diea grandiflora*, of which Mr. Beaton has justly said so much. It is, without doubt, one of the finest Orchideous plants grown; and as it is a native of Table Mountain, Cape of Good Hope, will belong to the hardy greenhouse.

Mr. Bull sent a collection of *Petunias*, single and double; and Messrs. Dobson & Pearce had some tables arranged with the new glass vases for dinner decoration, after the style of Mr. March's first-prize group. They were very elegant, and appeared as if they would be reasonable in price.

On the whole the Council have cause to be amply satisfied with their arrangements, and Mr. Eyles with the manner in which his zeal in catering for the benefit of the gardening world, as well as for the satisfaction of the public, has been rewarded; and, doubtless, another year will still further meet the wishes of all parties. In the great world of London there is room enough for all the societies and their exhibitions, and the greater the number the greater the encouragement to both amateurs and nurserymen to carry out the cultivation of the various objects for which prizes are offered.—D., Deal.

ANOTHER grand Show and a great gathering of the noblesse of the land to record in one week is a luxury which seldom falls to one's lot in hot weather. If I had been with the fairies for the last twenty years, or dreaming in fairyland during that period, and had "just come to myself" on Her Majesty's last birthday, and got into the midst of the crowd at South Kensington on that afternoon, I think I could hardly make out the difference in the company from the grand gatherings at Chiswick twenty years back, save in the fashion in ladies' dresses. All the rest seemed the same display over again—the same features, the same free and easy movements, the same grouping of parties, the same rush to the bands, the same indifference to flowers after four o'clock, and the same ways of cooling by icy linings and self-ventilating garments.

On the other hand, or rather behind all this, you met another series of self-same things—men who never incline but to conquer with the same plants and cut flowers as were at the Crystal Palace the Saturday before; the same prizes, the same judges to award them, the same numbers from twelves to eight times twelve cut Roses, the same winners, the same losers, the same boxes, the same moss and kinds of Roses; and a few, but very few, of the very specimens on which I have descanted in another column. Louis XIV., Madame Furtado, and Senateur Vaisse, were heel and toe with Gloire de Santenay, Madame Charles Crapelet, and Comte de Falloux; while Triomphe d'Amiens, Gregoire Bourdillon, a fac-simile of Géant des Batailles, said to be double its size, and four times its strength of limb and joint, and which will be the ladies' favourite Rose ultimately—Reynolds Hole, a real cherry-cheek Rose, but not a real triumph or a trump for florists. No matter, that is the Rose, you can mark it among fifty sorts at 500 yards distance. John Standish is one of the best and strongest very late bloomers in the autumn; and Madam Standish was quite another lady from what I said of her at the Crystal Palace. Blondin must have made her look pale there, no doubt; but here in her element she was a bright rosy pink, and, what is better still, she can climb a pole, and go across a tight rope just as well as Blondin did, and keeps to her perpetuity all the while. General Washington is a large Rose, and rather new in tint of colour. Comte de Falloux is said to be the best pot-Rose grown. Alphonse de Lamartine was the best-shaped Rose there, according to my eye, and the nearest in looks to Comtesse de Chabillant of all the Roses there, yet I never saw it recommended anywhere. It is a bad grower; is that caused by the stock? Gloire de Rosamene never did any good on a stock yet; but none is more free on its own roots. Just try Alphonse de Lamartine on its own roots and let us know. My word for it there is no more lady-like Rose in the catalogue. As shown at South Kensington it was a perfect love of a Rose, and much more regular in the dress than the Comtesse de Chabillant. Madame Boll was more perfect than on Saturday, and is up to a first-rater. Victor Verdier the same, and a fine strong, pillar Rose one-half the world

do not know yet about the goodness of *Triomphe des Rennes*, which came out just after the war in the Crimea was over. It is a beautiful pale yellow Noisette, which every one who wants a thorough good climbing Rose ought to have. It must hold the same place among Noisettes as *Gloire de Dijon* has obtained and well deserves among the Teas. But we must not overlook *Céline Forestier*, the newest yellow Noisette, a very fine thing. *Duc de Magenta*, a very fine light Tea Rose; and *Victor Emmanuel*, a most beautiful and very dark Bourbon Rose; must have been named by some clever Frenchman as a pun on two of the heroes who cleared the finest valley in Europe for the "unity of Italy," without, altogether, intending it at the time, and you may explain the pun according to your own view of that "unity of expression;" but let me explain the first victory of the hon. member for Salisbury within the "inner quadrangle," without prejudices to those of the quadrilateral of the Ticino, or the Conice de Seine et Marne, and the rest of the Bourbons.

The way Mr. Keynes arranged his Roses, beginning at the highest grade was—*Général Jacqueminot*, *Madame Pauline Villot* (a first-class, now, deep-coloured Rose), *Lord Raglan*, *Léon des Combats*, *Triomphe des Beaux Arts*, *Duchess of Norfolk*, *Louis XIV.*, *Ambroise Verschaffelt*, *Stephanie Beauharnais* (a quadrangular flower this time), *Triomphe de l'Exposition*, *Louis Chaix*, *Géant des Batailles*, *Pio Nono*, *Glory of France*, *Gloire de Lyons*, *Senateur Vaisse* (his best in this group), *Petit Pierre*, *Empereur de Maroc*, *Ornement des Jardins*, *General Washington* (quite new), *Paul Duprez* (very fine), *Maria Portimer*, *Evêque de Nîmes*, *Jules Margottin*, *Cardinal Patrizzi*, *François Premier*, *Boule de Nanteuil*, *Général Castellane* (very fine colour), *Eugène Appert*, *Dr. Bretonneau*, *Prince Léon* (extra fine), *Gustave Govaux* (peculiar), *Victor Verdier* and *Gloire de Vitry* (an immense size). I would plant all these just as they stand for one colour of various tints, and the following outside of them all round, supposing it were a circle—*Madame Vigeron*, *Juno*, *Joan of Arc*, *Mathurin Regnier*, *Beauté de Roygheim*, *Mdlle. Therese Appert* (a splendid miss in a loose dress), *Virginal* (very fine, but not the finest white H.P.), *Céline Forestier* (you see this is different planting from that in another column for variety), *Louis Odier*, *Monsieur de Montigny*, *Madame Masson*, *La Ville de St. Denis* (large), *La Fontaine* (a Camellia tint), *Reine des Fleurs*, *Devoniensis*, *Imperatrice Eugénie*, this is my favourite white H.P., but there is more pudibundus in the centre than in that of *Virginal*; *Triomphe des Rennes* (afore-said, though not a match to *Devoniensis* on the off-side of virgin purity, I must get it in as it was there), *Alphonse de Lamartine* (most charming colour, size, and shape), *Comte de Nanteuil*, *Madame Phelip* (a true carnea colour), *Charles Duval*, *Alexandine Bachmetoff* (fine), *Duchesse d'Orléans*, *Comte de Plater* (all but white. What is it?), *Charles Lawson*, *Anna Alexieff*, *Louis Peronny* (should have been *Louis Pæonyflowered*), *Souvenir de la Malmaison* (not so fine as mine on its own roots), *Queen of Denmark*, *Lady Stuart*, *Lord Palmerston* (very good), *La Reine*, *Acidale*, *Madame Vidot*, *Madame Hector Jacquin* (certainly out of *La Reine*), *Madame Knorr* (large, flat, fat, and fleshy, but as sweet as the old Cabbage Rose), and the beautiful and very lovely *Comtesse de Chabillant*, and it is best to stop at a great beauty like her Countesship.

That was a collection, and I have selections from Messrs. Mitchell, Hollamby, Paul, Turner, Cattell, Cant, Fraser, Laing, and Cranston, but they will keep.

There was a tie between the Messrs. Fraser and Mr. Cant for new Roses, and both were best and had best prizes. All the new Roses were very fresh-looking early in the day; but the conservatory must have been too hot, for all the Roses went in the afternoon into the present fashion of loose flowing robes, which did not become them nearly so well as their morning dresses. The best new Roses in Messrs. Fraser's were—*Senateur Vaisse*, *Madame Furtado*, *General Washington*, and *Louis XIV.*, *Abdel Kader*, *Princesse Mathilde*, and *Duc de Cazes* (three dark kinds), and *Mademoiselle Pauline Villot*, a deep red, finely-cupped Rose.

The best in Mr. Cant's collection were—*Madame Crapelet*, *Louis XIV.*, *La Boule d'Or* (a Tea), then *Madame Boll*, *Général Foray*, *Victor Emmanuel* (dark), and *Duc de Magenta* (a light Tea). Mr. Standish second, with his Reynolds Hole, *André Desporte*, *Madame Furtado*, *Marguerite Appert* (after *Madam Rivers*), *John Standish* (strong, large, dark), *Comte de Falloux* (aforesaid and fiery red), *Eugène Appert*, *Baron Gonella*, *Gregoire Bourdillon* (aforesaid also), *Triomphe d'Amiens*, *Madam Standish* (bright pinky bluish), and *André Desporte* (as above).

With these we finish for the present to say that the large conservatory was "furnished" by such good wishers to the good cause in which we are all engaged as the Messrs. Veitch, Fraser, Henderson, of Pine Apple Place, Turner, Bull, Smith, Gaines, and Cranston.

C. Leach, Esq., King's Road, Clapham Park, sent three large pan pots of his glorious *Disa grandiflora*, the very finest terrestrial Orchid in the world, and there is none in the air to compare it with. Moreover it was in full perfection as it was never seen before in Europe. But who can describe it? I was most thoroughly beaten thirty years back in all the attempts I made at growing that plant. Sir Joseph Paxton could tell as much, and several other heads equally sound were defeated in the same struggle; and no one could, or did, grow *Disa grandiflora* in England, till Mr. Leach spent large sums of money in proving it at last to be of easier management than an herbaceous *Calceolaria* or a seedling *Cineraria*.

It requires the very same kind of treatment as we have always advised for *Tritonia aurea* and which so few followed out. Among all the bulbous-looking plants in cultivation, there are no two of them so much alike in their constitution and in their very peculiar habit of dying down yearly but never going to rest. Before the growth of this year dies back, that for next year is up and doing, and they both spawn very much at the roots; both are very thirsty plants, and both resent and sulk at the least attempt at forcing them or submitting them to one extra degree of heat more than is necessary to keep them from the frost. When geothermal cultivation comes in fashion, *Disa grandiflora* and *Tritonia aurea* will be seen in bog marshes out of doors the year round, with a glass case over them all the winter.

D. BEATON.

THE PRIZE LIST.

CLASS I.—96 Varieties, one truss of each. (Nurserymen).—First, J. Mitchell, Pitdown Nurseries, Maresfield, Sussex. Second, J. Keynes, Salisbury. Third, E. Hollamby, Tunbridge Wells. Fourth, Messrs. Paul and Son, Old Chesham Nurseries, Herts. Extra, W. Paul, Waltham Cross.

CLASS II.—48 Varieties, one truss of each. (Nurserymen).—First, J. Cranston, King's Acre Nurseries, near Hereford. Second, B. R. Cant, Colchester. Third, J. Keynes, Salisbury. Fourth, R. Laing, Twickenham Nurseries, S.W. Extra, E. P. Francis, Hertford; E. Hollamby, Tunbridge Wells; Messrs. Paul & Son, Old Chesham Nurseries, Herts; C. Turner, Royal Nurseries, Slough.

CLASS III.—24 Varieties, three trusses of each. (Nurserymen).—First, J. Keynes, Salisbury. Second, Messrs. J. & J. Fraser, Lea Bridge Road, Essex. Third, R. Laing, Twickenham Nurseries, S.W. Fourth, J. Cattell, Westerham, Kent. Extra, B. R. Cant, Colchester.

CLASS IV.—24 Varieties, one truss of each. (Nurserymen).—First, J. Keynes, Salisbury. Second, C. Turner, Royal Nurseries, Slough. Third, J. Cattell, Westerham. Fourth, B. R. Cant, Colchester.

CLASS V.—48 Varieties, one truss of each. (Amateurs).—First, J. T. Hedge, Reed Hall, Colchester. Second, Miss L. Craw-huy, Caversham Park, Reading. Third, J. Hollingworth, Maidstone. Fourth, G. T. Brush, gardener to J. Tritton, Esq., Norwood.

CLASS VI.—24 Varieties, one truss of each (Amateurs).—First, W. Corp, Milford, Salisbury. Second, J. T. Hedge, Reed Hall, Colchester. Third, A. Moffatt, gardener to Viscount Maynard, Dunmow, Essex. Extra, equal third, — Warthington, Caversham Priory, near Reading. Fourth, W. Mercer, F.R.H.S., Grove House, Staplehurst.

CLASS VII.—18 Varieties, one truss of each (Amateurs).—First, Rev. W. F. Radclyffe, Rushton Rectory, Blandford. Second, E. Moore, Horsell, near Woking, Surrey. Third, J. T. Hedge, Reed Hall, Colchester. Fourth, G. T. Brush, gardener to J. Tritton, Esq., Norwood.

CLASS VIII.—12 varieties, one truss of each (Amateurs).—First, J. T. Hedge, Reed Hall, Colchester. Equal, W. Corp, Milford, Salisbury. Second, Rev. H. Helyar, Pendomer, Yeovil. Third, G. T. Brush, gardener to J. Tritton, Esq., Norwood. Fourth, Rev. Mr. Child, Little Easton, Dunmow, Essex. Equal, E. Moore, Horsell, near Woking, Surrey.

CLASS X.—50 Roses, 12 Varieties, in 8-inch pots. (Open).—Second, C. Turner, Royal Nurseries, Slough.

CLASS XII.—12 New Roses of 1860-1 (single trusses), distinct. (Open).—First, Messrs. J. and J. Fraser, Nurserymen, Lea Bridge Road, Leyton. Equal, B. R. Cant, Nurseryman, Colchester. Second, J. Standish, Royal Nurseries, Slough. Third, John Keynes, Nurseryman, Salisbury.

CLASS XIII.—Collection of Moss Roses, single trusses. (Open).—First, Messrs. Paul & Son, Old Chesham Nurseries, Herts. Second, E. Hollamby, Nurseryman, Tunbridge Wells.

CLASS XVI.—Miscellaneous.—Extra, J. Veitch & Son, Exeter and Chelsea; J. Mitchell, Pitdown Nursery, Maresfield, Sussex; J. Standish, Royal Nurseries, Bagshot; E. Hollamby, Nurseryman, Tunbridge Wells. Plants of *Disa grandiflora* were again exhibited in fine condition by J. Leach, Esq., King's Road, Clapham Park. Groups of miscellaneous stove and greenhouse plants were also exhibited by Messrs. Veitch & Son, Royal Exotic Nursery, Chelsea (the centre group of Ornamental Plants in Japan and China Vases); J. Standish, Royal Nurseries, Bagshot (Stove and Greenhouse plants); Messrs. Lea, Vineyard Nurseries, Hammersmith (Stove and Greenhouse plants); Messrs. A. Henderson and Co., Pine Apple Place, Edgware Road (Stove and Greenhouse plants); Messrs. J. & J. Fraser, Nurserymen, Lea Bridge Road (Stove and Greenhouse plants); W. Bull, F.R.H.S., King's Road, Chelsea (Stove and Greenhouse plants); C. Turner, Royal Nursery,

Slough (groups of Geraniums and Fuchsias, and stands of Verbenas and Plocees); Thomas Gaiues, Battersea (groups of Pelargoniums, &c.); Messrs. Dobson & Pearce, 19, St. James' Street (two sets of Dinner Table Decorations.)

CULTURE OF THE GRAPE VINE.

(Continued from page 277.)

CULTIVATION IN A GREENHOUSE.

THE kinds best adapted for a greenhouse are Black Hamburgh, Lady Down's, a Grape that keeps well, West's St. Peter's, Royal Muscadine, Black Prince, and Dutch Sweetwater. More kinds might be tried, but the above are good croppers and sure to answer.

PLANTING.—The best season is March, just before the buds break.

PRUNING.—The best mode of pruning for a greenhouse is undoubtedly the spur system; and for this reason, that the foliage is less in quantity, and, therefore, does not shade so much the plants that are in the house than when the single-rod system is adopted.

The *Pruning in Summer* consists in stopping the laterals at the third or fourth joint, and, when the side eyes burst, to stop these again and again throughout the growing season. Every fruit-bearing shoot should be stopped at the second joint above the bunch. When the fruit begins to colour, the first-made laterals should be cut clean off, in order to give more light to the leaves and fruit.

Autumn Pruning.—The Vines in autumn may be half-pruned by cutting off all the laterals in order to ripen the wood and fill the buds with fruit-bearing sap. As the leaves turn yellow they should be removed.

Winter Pruning.—This may be done in any of the winter months after the fruit is all gathered and the leaves all fallen off. At that season the greenhouse plants will all be housed. I always found it more convenient to prune the Vines by loosening them from the rafters in succession, bringing each one down into the walk or path, commencing at one end, it is no matter which, pruning each side shoot to one eye as directed before, and when that Vine was pruned, clearing away the loose bark and applying a paint made of water thickened with sulphur and clay. Use a softish brush and see that every part is covered with the sulphur. This mixture is a great preventive, if not a cure, for mildew, and destroys scale and red spider. Then tie the Vines down to the front in a bundle. In that position they may remain till the buds begin to break. By being thus trained horizontally at the lowest part, and consequently the coolest part of the house, every bud will be in an equal temperature, and will all receive an equal amount of stimulating sap: hence the lower part of the rafter will be as well furnished with fruit as the highest, and the berries will swell almost equally as fine as those on the higher part of the house.

Spring Management.—I have often allowed them to remain in this horizontal position till I could stop the laterals, but when I did so I was obliged to be very careful of the young shoots, for in their young state they are easily slipped off at the base. There is, however, a great convenience in doing this work when the Vines are so handy and easily examined. As soon as one Vine was operated upon—that is, the superfluous shoots rubbed off, the fruit-bearing spurs stopped, and, if long enough, tied slightly to the main stem—that Vine was tied up to its proper rafter, and the next taken in hand, and the same operations gone through till every Vine was done. It requires at least two persons to do this; one to hold the Vine, and the other (the more experienced hand, of course) to thin out the shoots and stop those that are left. In lofty greenhouses crowded with plants, this spring dressing when the Vines are tied up to the rafters before it is done is a very difficult and troublesome affair. I therefore recommend the leaving them tied down to the front till they have made such a growth as will enable the cultivator to give them their first dressing so conveniently. With moderate care he will accomplish this safely, and certainly better and more correctly.

Summer Management.—This consists in regularly stopping the laterals and keeping them tied in neatly to the wires. Speaking of wires reminds me that I have not yet described them. There should be three—one in the centre to tie the main stem to, and one on each side to tie the lateral to. Each wire should be about 2 inches from the glass and 1 inch from the top of the

wire. To keep them in position, there should be strong iron pins, sharp at one end, or made with a screw, and an eye at the other end, the wires run through those eyes, and they keep the wires in their proper place. If the wire is pretty strong, the pins will do if placed 6 feet apart. Thus trained, when the Vines are in full bearing all their length, the bunches hang in two straight rows, and are very ornamental. The laterals should not be trained at right angles, but rather slanting upwards. If the Vines are very fruitful I would never allow more than one bunch to a shoot. The spurs should be as nearly as possible a foot apart, and at equal distances. When the Vines are in bloom, the air of the house should be moderately dry. In general, the air should be more moist during the night than during the day. Alternate moisture and dryness will cause the anther coverings to contract and expand, and eventually to crack and open when the pollen is ripe and ready to be shed upon the stigma. If all this has gone on properly, the berries will set freely and will soon begin to swell. Then is the time to commence thinning them—an operation that must not be neglected. Thin freely, and you will have larger berries, but handle the berries that are left as little as possible. Most of the kinds proper for a greenhouse have bunches with large shoulders. The bunch will be more symmetrical, and each berry will ripen more equally if those shoulders are tied up and spread out equally on each side. Some use pronged sticks for this purpose, but I judge that soft matting is the better article, and, besides that, the branches of the bunch can be spread out more equally. While the thinning is going on examine the laterals and ties, and top the one and adjust the other.

Syringing.—During summer, before the Grapes begin to colour, give them a good syringing once or twice a-week, especially after a hot, sunny day.

Air, of course, will be given very freely in the early stages of growth, because of the plants; but as soon as the greenhouse plants are removed out of doors towards the end of May or beginning of June, less air will do for the Vines. The stage of the greenhouse will then be filled with plants, such as Balsams, Cockscombs, &c., that will bear a higher temperature. In general, the rule should be to give air as soon as the thermometer indicates 65°, the maximum heat at noon should never exceed 70°. In cold, damp weather, a little artificial heat from the flues or hot-water pipes will be of great service.

When the Grapes are fully ripe, they will be attacked by wasps and other fruit-eating insects. The best remedy is to cover the air-giving openings with fine netting or canvass. Even a door of canvass will be of service to keep out those intruders. As the Grapes in a greenhouse will hang a long time (I have had them good till Christmas) the air in the house should be kept as dry as is consistent with the health of the plants. No dead matters should be allowed in the house at all, such as yellow decaying leaves, or moss, or anything that will keep damp. The floors should be kept dry and clean, and abundance of air given during every dry day. Fortunately, all these precautions are equally as necessary for the health of the plants, as for keeping the Grapes from moulding and rotting on the Vines.

I have not mentioned the border for Vines in a greenhouse. The reader will remember what I said on Vine-borders, how they should be drained and made, but he might inquire, Will the border require covering to protect the roots? If it is properly drained, the only covering it will need is one that will keep off the heavy rains during autumn and winter. As the Vines in a greenhouse are not forced, but break naturally with the heat of the spring sun, which heat is applied also to the roots simultaneously, there is no necessity to heat the soil artificially. It is early-forced Vines that require this, in order that root action may be going on at the same time that the top action is set in motion by internal heat. On that point, however, I shall have much to say when I come to the stove and vinery culture of the Grape.

T. APPELBY.

ONION MAGGOT.

HAVING noticed your reply to "NEW SUBSCRIBER," relative to the Onion maggot, and that you know of no remedy. I beg to inform you that if your correspondent will water his Onions, when about 4 inches to 5 inches high, with the common lant (human urine), either fresh or old, it will entirely prevent the maggot. It is a sure remedy, and an ever-trusted one.

these white grubs; and I venture to say your correspondent will not be if he uses the same means. I give each bed two waterings. I use the same for my Carrot crops with success.—S. H. B.

THE ROSE SHOW AT THE CRYSTAL PALACE.

THIS was a grand Show indeed, and a grand company to see it. The first five classes were for nurserymen, beginning with a collection of ninety-six varieties, and five competitors entered each with his eight dozens of gorgeous blooms. The second class was for forty-eight kinds, and ten put in for the prizes. The third class was for twenty-four kinds, and ten exhibitors competed. The fourth class was for twelve kinds; and the fifth, twenty-four kinds, and three trusses of each, in both five competitors entered—that is to say, thirty-five entries from nurserymen alone, besides the class for new Roses, in which five more entries were made. Private growers began in Class 6, with thirty-six kinds, and there were nine competitors. Class 7, for twenty-four, had no less than seventeen or eighteen entries. Class 8, for eighteen kinds, had eleven entries. Class 9, a full dozen kinds, and twenty-three entries, with two entries of Roses in pots. Count up all those and add a long tableful of Roses, not for competition, and the sum total will just tell how grand the Show was.

Then there were Pansies, Pinks, Picotees, and Carnations, and two large specimens of the Black-eyed Glory Pea of New Zealand (*Clianthus Dampieri*); also, a low spreading fine-leaved new Fern from Australia, *Hypolepis distans*, sent by Mr. Dean, the great florist of Bradford, or near it at Shipley; and also the grand bell-double Fuchsia Mammoth, from Mr. Smith, of the Hornsey Road Nursery. He was a Fuchsia man from the beginning, and that is his "Good Gracious" result at last.

The whole of the east nave or north end of the Crystal Palace was filled with all these to the very portals of the canvass division which holds the heat to the parts round the bronze fountains. But at the north end of the cut Roses stood an assemblage of prize silver cups and salts and other silvers, to tempt the lucky winners to take the full value of their prizes in wrought silver, and so get hold of family memorials to commemorate the success of the present representatives of the family estates and titles. Mr. Standish, the Messrs. Fraser, and Messrs. W. Paul & Son, were first, second, and third, for new Roses; and Mr. Mitchell and Mr. Keynes were the other two who tried their luck in novelties. Mr. Keynes was the only one who had the new yellow Rose, *Céline Forestier*; and Mr. Mitchell had a very promising new Rose, named after his better half, Mrs. Mitchell, it is a bold, rosy pink flower of good substance. But florists are not to follow me in my choice, I should soon get them into a scrape if they did. Let them follow "D., of Deal," and my word for it they will never go wrong themselves, or ever think of wronging others.

Now, then, for the ladies and the flower gardens. Louis XIV. was my favourite Rose of all the newest Roses there. But the way I viewed them was just that way I should like to see them planted. I began with the colours, and took so many of each class out of all the collections all the way round. Of course, the best as I thought, judging only from what was before me with no reference to the habit of the plants, many of which I do not know sufficiently yet to decide on the habit.

The darkest Rose there was Prince Noir, a loose flower; and the first of my group of colours consists of Roses that are darker than Général Jacqueminot, or all the best between the Prince and the Général. Eugène Appert was very rich. Mr. Standish put it as one of the best bedders, and Mr. Cranston says "it will, doubtless, make a fine pillar Rose." Princesse Mathilde next, a bronzed dark purple and not very full, but is of stout substance. François Arago, a deep dark flower; Empereur de Maroc, a fine dark; Triomphe des Beaux Arts, some flowers very fine and some were loose in the centre; Cardinal Patrizzi, as dark as usual; La Muskowa (Gallice), a dark Gloire de Rosamene as one might say, but the petals very strong—would it not make a good mother in crossing? The four following might be a shade from the above—viz., Madame Masson, Lord Raglan, Victor Trouillard, and Victoire de Magenta. Louis XIV. is one shade deeper than Eugène Appert, but gets redder when going off. This will make my group of darkest Roses.

The second group begins with my favourite Général for which

I had to do battle, when some inclined it for a second-class Rose—Général Jacqueminot, the most universally exhibited of all the Roses. Sénateur Vaisse and Oriflamme de St. Louis, two splendid rivals to the Général; Gloire de Santenay and Madame Charles Crapelet, another good pair, Madame being the redder of the two; then Géant des Batailles, Buffon, Prince Léon, and Duchess of Norfolk, which has much improved since I first saw it; Souvenir de Leveson Gower, a very large, fine Rose; and Paul Ricaut, all H.P.; but the last finish the second group.

The third group begins with that unique-looking Rose Evêque de Nîmes—should not this have been Bishop of Nîmes? Alexandrine Bachmetoff, a large, flat, bright red; François Premier, another flat, large, cherry-ripe-like Rose; Baronne Halles; General Simpson; Comtesse de Chabillant, a very good Rose, but lighter with age; Alphonse de Lamartine; Madame Hector Jellissier, looks as if a seedling from La Reine; Madam Place, a very double imbricating Rose, rising well in the centre; Madame Furtado, a splendid new Rose, deeper than La Reine, and going off after Baronne Prevost; Anna Alexieff, a pretty creature; and William Griffiths, the lightest of this group.

The next group begins with Souvenir de la Reine de l'Angleterre, Reine des Fleurs, Madame Vidot, Madam Rivers, and Madam Standish might be out of one hip at the same cross (three great beauties and no mistake), Louis Peronny, Général Pellissier, Caroline de Sansal (a large bloom with a tumbled centre), Duchess of Orleans (also very large), Naomi (more rosy), Lady Stuart (the next after the three ladies in light costume), Mathurin Regnier and Augusté Mie, which was rather loose this time; and the next, the real, scarce, pure white Roses. Madame Plantier was the best of them there. *Acidale* was there, but so loose as to raise suspicion about its habits after many years' service. Nephets from the tea party; Virginale, a promised blushing beauty; and the Malmaison and Devonensis were the pink of the whites. And the shine of the yellows were in Cloth of Gold, Gloire de Dijon, Solfarino, La Sylphide (a fine Tea), Triomphe des Rennas (perhaps the largest of the Noisettes, a very large flat flower), and Viscomtesse des Cases (as ragged as a gipsy, but what a fine colour!) Céline Forestier is a flat flower of a more canary yellow than the Viscomtesse des Cases.

What a beautiful plantation of Roses might be made if a row was devoted to each of these groups. Although the sorts differ slightly the difference is not so much, or at least would not appear so much, in a bed as it is in reality; and I have endeavoured to put in the names just as I would plant them—but, of course, that is of no value, and any other arrangement of each group would be just as good. What I aim at is a radical change in the way of planting Roses: many of them are murdered at present for being planted just as if they were thrown down out of the top windows of a house into the courtyard. But Dahlias are nearly as badly planted for effect in most places.

But here are some splendid Roses culled out of some few of the first and second-prize collections, beginning with Mr. Mitchell's ninety-six sorts—Madame Charles Crapelet, Abdel Kader (very dark), Baronne Halles, La Pactole, Prairie de Terre Noire (a new H.P., a dark purple), Louis Chaux, La Reine, Louis Gulino (very dark), Madame Schmidt, Maréchal de la Brunerie (very large, and shot silk light Rose), Prince Léon, Gloire de Santenay, Madam Rivers, Louis XIV., Général Jacqueminot, Louise de Savoie (a very large, light Tea Rose), Victor Verdier, Triomphe des Beaux Arts and Victoire de Magenta (two very much alike), Triomphe des Rennas (a splendid, large, light, yellow Noisette), Elize Sauvage (very fine), Lord Palmerston (a regular Cherrycheek—a well-marked colour), Lord Raglan, Madame Furtado, Sénateur Vaisse (fine), and Mrs. Mitchell (a stout bright rosy pink).

Mr. Keynes, of Salisbury, who only came out last year for the first time in the race for Roses, and took almost every cup and stirrup for which he ventured to run, was neck and neck, this first Rose Show, with the winner of the "Darby," and only lost by half a nose making a tie for ninety-sixes. Here are some of his best—Anna de Diesbach, more like a large pink Hollyhook than one can tell; Evêque de Nîmes (Mr. Keynes does this brilliant and very peculiar-looking Rose better than any grower there. The sort seems to be a good trial Rose to get at the skill of the grower); Prince Noir, his darkest; Abdel Kader nearly as dark; Comtesse de Chabillant; Boule de Nanteuil, one of the best of the very old summer Roses; William Griffiths; Paul Duprez, very dark red, a nice little plant on its own roots, but too dwarf to do much good on a strong stock;

Duchess of Orleans; Madam Campbell, a pale Rose, variegated, veined, and potted in a peculiar way, and then very handsome—but very often Madam Campbell is as plain as Peggy Houden; Sénateur Vaisse, one of the very best of the new Roses, and the nearest to Général Jacqueminot; François Arago, a splendid dark velvety Rose; Madam Standish, uncommonly well done; Stephanie Beauharnais, as flat on the face as Evêque de Nîmes; François Premier; Madame Masson; Madame Van Houtte, a large, full, rosy flower; Madame Philip, in the way of Madame Vidot; Alphonse Karr, a very fine rosy pink; La Fontaine; Ornement des Jardins; Gloire de Vitry; Mademoiselle Therese Appert, a very large, fine light Rose; Lamarque; General Simpson, very fine; Reine des Violettes, one of the new Roses, and the nearest to a true violet colour; Jules Margottin, very fine.

The following are out of Mr. Cranston's collection of forty-eight in four boxes; they had a very effective look as they stood:—Madame Boll, a very large conspicuous new Rose of a rosy-peach colour, also a strong able grower; Sénateur Vaisse; Victor Verdier, a splendid new Rose, after Jules Margottin, one of the best of the new, or for a pillar Rose; Lælia, a noble flower, first exhibited by him at St. James' Hall, if I recollect right, it is something after La Reine. Mademoiselle Marie Dauvesse, an exquisite new Rose of a pinky hue; La Sylphide, a fine bluish yellow Tea; Mademoiselle Therese Appert; Louis XIV.; Anna Alexieff, very large—a tree Pæony-like flower; Virginal, a pure white H.P. with a bluish centre; Triomphe de l'Exposition, very large; Odier Vital, a large pale Rose; Madame Furtado, a fine deep Rose, a new one after La Reine; Louis Chaix, a very large, flat, deep red Rose; Comtesse Cécile de Chabillant, a fine Rose; Madame Charles Crapelet, fine, bright rosy scarlet, one of the best new Roses; Common Moss; Duchess of Norfolk; Viscomtesse des Cases; Baronne Prevost; and Jules Margottin.

Next to these were another splendid lot, which took the second prize for Mr. Keynes. But we must go to the new Roses, and begin with the winning-stands. Mr. Standish took the first prize; he had two boxes, in one the flowers were arranged florist fashion, and in the second they were as I would plant the kinds—a row of each kind across the box, one row of Eugène Appert, consisting of four blooms; one row of Reynolds Hole, a bright cherry-cheek Rose; one row of Comte de Falloux, a large bright red; one row of Madame Furtado, one of the best; one row of Madam Standish, done to a tee, of course (it was very high in the centre, and opening in the way of Augusté Mie at first); a row of four of Reine des Violettes; one row of Gregoire Bourdillon, a deep red; André Desporte, bright red; Marguerite Appert, in the way of Madam Rivers, but more flat; Louis XIV.; John Standish, in the colour of Géant des Batailles; and Mademoiselle Bonnaire.

The Messrs. Fraser were second for best new Roses, beginning with the young lady Mademoiselle Bonnaire, as like Madam Rivers as if she were her wedlock firstborn; Gloire de Santenay, the very next after, if not before, Général Jacqueminot; Eugène Appert; General Washington, a very large red; Leonie Moise, a marked improvement on Empereur Napoléon; Victor Verdier, a fine thing; Triomphe d'Amiens, very near Général Jacqueminot; and Barlow, a very dark Rose.

Among those in the Messrs. Paul's new kinds, I noted Louis XIV. as the best; then Souvenir de Montceaux, a fine velvety scarlet; General Washington; Triomphe de Lyons, a seedling from Prince Léon, and an improvement on that velvety scarlet; President, a Tea Rose of a salmon tint; Madame Boll, large flat rosy peach; and Gloire de Santenay, aforesaid.

From Mr. Mitchell's new kinds in competition I booked these:—Gloire de Santenay; Sénateur Vaisse; Dominique Davan, very dark; Comtesse Louis de Hegorlay, very rich velvety dark Rose; the rest as aforesaid.

Mr. Keynes had Céline Forestier, which no one else had; Boule d'Or, a fine Tea; Madame Mielles, large, and like Baronne Prevost; Sénateur Vaisse, the best flower of it there; Belle Lilleoise, a fine purplish flower. As I was examining that flower, I heard from the opposite side something about pollen, stamens, races, two kinds out of one flower, and ever so much about crossing, upon which I pricked up my ears to see if I could catch something new or fresh, or something worth the expense of being laughed at, and I did. A great gun in the crossing was actually explaining to a tall, thin, gentlemanly Fellow of the Royal Horticultural Society, how he could get two races of the *Andromeda* from one flower, and a pollen from one flower

Now, any one in the merry mood might lawfully laugh at my expense for having supposed that I knew a secret which is so easy of proof, when scores might have known more about it than I did. Mr. Standish is the man, and, singularly enough, Dr. Hogg was again the repository of the grand secret.

D. BRATON.

ENEMIES TO OUR FRAMES.

"I WOULD not care to enter on my list of friends the man who heedless treads upon a worm." Very good; but Cowper had not in view his Cucumbers and frames infested with woodlice, ants, &c., when he penned that kindly passage. For my own part I tread upon hundreds of woodlice, I may say, daily; and I should consider a man my friend if by so doing he could rid me of the vermin. Ah! but that was a lucky thought those last-year's *Heracleum giganteum* stems cut into 1½-foot lengths, with a piece of moss entered at one end and laid around the frame inside, to be vertically rapped on the ground every morning, and the inmates—shades of "the divine Williams"—allowed to escape if they can. (If I had the fraction of a farthing given me for each that I had destroyed this season, I should be tempted to wait upon my broker, when a maternal country would request me to wait two or three hours for a receipt; which time I should spend by taking the rail to Deptford, walking back through the market-gardens to the Commercial Dock station, take a good look at the crops and the systems of cultivation, as well as the wonderful number of trains passing one on all sides to and from our mighty metropolis.) Let alone the ants which preyed upon every opening blossom, and would have to this day prevented one Cucumber swelling off, had I not placed some bee food I had to spare in some saucers about the frame, which satisfied their rapacious maws, and became "death in the pot" to myriads. As to the aphid tribe, some brown paper soaked in saltpetre, then dried and cut into lengths about 2 inches wide, some tobacco spread thereon, rolled up cigar fashion, and two or three of them placed in forked sticks stuck into the mould in the frame, so as nearly to reach the glass. Light the self-acting cigars and place on the lights; cover up with matting to keep in the smoke for two or three hours; and when taken off there will be discovered all dead corpses, and a wipe or two of wetted sulphur against the back of the frame prevents the red spider breathing. Thus wilful man will have his way, and I have now a good show of fruit. My bed was made 4 feet high for a two-light frame of the sweepings of winter's leaves and debris mixed with the sticks and rubbish from the wood-house, along with the March clippings of the Ivy from our surrounding walls, and a very good and lasting heat the homogenies give. I adopt a system of watering, which I like very well, and it would prove applicable more so to Melon growers. An old rose of a watering-pot, with its face pummelled flat, and a water-funnel placed in that, can be moved about and made to stand between the leaves on the surface of the soil, and any amount of water or liquid manure become supplied to the roots of the plants without the foliage being wetted at all.—UPWARDS AND ONWARDS.

PLANTS KILLED, INJURED, OR UNINJURED BY THE LATE SEVERE WINTER.

UNINJURED.

Thuja occidentalis, *T. gigantea*, *T. pyramidalis*, *T. plicata*, *T. sibirica*, *T. Craigiana*, *T. robustum*, *T. caucasica*, and *T. macrocarpa*. *Cupressus Lawsoni*, *C. thuyoides*, and *C. thuyoides atrovirens*. *Pinus cembra*, *P. excelsa*, *P. Jeffreyi*, *P. Lambertiana*, *P. Beardsleyi*, *P. laricio*, *P. austriaca*, *P. pumila*, *P. Benthiana*, and *P. monticolor*. Common Box. All the Yew tribe, except the common, of which there are some cut. *Juniperus virginiana* (true), *J. sabina*, *J. tamariscifolia*, *J. prostrata*, *J. sabina variegata*, *J. communis*, *J. suecica*, *J. oblonga pendula*, *J. sinensis*, *J. sinensis stricta*, *J. glauca*, *J. excelsa*, *J. hibernica*, *J. hibernica compacta*, *J. squamata*, *J. alpina*, *J. thurifera*, *J. sphaerica*, *J. viride pendula*, *J. pumila*, and *J. fragrans*. *Retinospora erioides*. *Aristolochia siphon*. *Ilax laurifolia*. This is the only Holly that has stood the winter here without being cut. *Berberis japonica*, *B. communis*, *B. aquifolia*, *B. glumacea*, and *B. emarginata*. Broom, pale and yellow Portugal. *Cedrus libani*, *C. deodora*, *P. nobilis*, *P. sinensis*, *P. Nordmanniana*,

P. pichta, and *P. balsamea*. *Thujaopsis boreale*. *Abies clauseniana*, *A. Menziesii*, *A. Douglasii*, *A. orientalis*, and *A. canadensis*. Honeysuckles: *pubescens* (yellow), Yellow Trumpet, Early Yellow, Early Dutch, and Late Dutch. *Arbutus arctica*, *A. prostrata*, *A. sibirica*, and *A. Drummondii*. *Kalmias*, sorts. *Andromedas*, sorts, except *A. speciosa* and *A. axillaris*. *Deutzia gracilis*. *Skimmia japonica*. *Cunninghamia lanceolata*. *Ledums*, sorts. *Menziesia empetrioides*. *Ericas*, except *E. australis*. *Genistas*, sorts. *Daphne cneorum*, and *D. neapolitana*. *Lilacs*, sorts. *Spiræas*, sorts, *S. Lindleyana* and *S. bella*. *Weigela rosea* and *W. amabilis*. Most of the *Rhododendrons*.

SLIGHTLY INJURED.

Wellingtonia gigantea. *Cupressus thyoides variegata*. *Abies pinsapo* and *A. cephalonica*. *Ilex Hendersonii*, *I. ovatum*, *I. Donningtoni*, *I. Foxi*, *I. Smithii*, *I. tortuosa*, *I. madeiriensis*, and *I. heterophyllum*. Box, variegated tree. Box edging. *Arbutus mucronata*. *Prinos glaber*. *Berberis dulcis*. *Rhododendron dauricum atro-virens*. *Cedrus atlantica*. *Erica australis*. *Cryptomeria Lobbi*, *C. Menziesii*, *C. polifolia*, *C. polifolia alba*, *C. globosa alba*, *C. nana*, and *C. pensylvanica*. *Pyrus japonica*.

SEVERELY INJURED.

Ilex monstrosum, *I. ferox*, *I. aquifolium* (common), *I. dahoon*, *I. fructu-luteo*, *I. crispum*, *I. balcanica*, *I. Shepherdii*, *I. ciliatum*, *I. ciliatum major*, *I. aquifolium pendula*, and all the variegated kinds. *Aucuba japonica*. *Taxodium sempervirens* and *T. distichum*. *Cedrus deodara* (some plants 10 feet to 12 feet high killed). *Cryptomeria japonica*. *Ligustrum japonicum*, *L. nepalense*, *L. vulgare*, *L. vulgare sempervirens*, and even the old Privet hedges, thirty or forty years old, are killed to the ground. Broom, white and yellow (common). *Cytisus*, several sorts. *Cotoneaster microphylla*, *C. ura-ursi*, and *C. acuminata*. *Thuja sinensis*, some killed. *Laurustinus*. *Daphne laureola*. *Juniperus recurva*. *Garrya elliptica*. *Arbutus unedo*, and *Arbutus andrachne*. *Ribes speciosa* and *Escallonia macrantha*, both growing to a south wall, and both killed to the ground. *Alaternus*. *Berberis Beali*. *Araucaria imbricata*, some killed. *Pyracantha*. *Thuja aurea* (some killed), *T. compacta*, *T. sinensis variegata*, and *T. tartarica*. *Glycine sinensis*. Honeysuckle *Shepherdii* and *Scarlet Trumpet*. *Phillyrea*, sorts, mostly killed. *Deutzia scabra*. *Scorpius Senna*. *Ivy*, palmated, Irish, common, and the variegated sorts. *Juniperus phœnicia*, *J. dealbata*, and *J. Smithiana*. *Abies Smithiana*. Evergreen Oak and *Lucombe's Oak*. *Buddlea globosa*. Double Whins. *Spiræa Lindleyana* and *S. bella*. *Cistus laurifolia* and *C. gum*, some killed. Laurels, Portugal and common, narrow-leaved and sickle-leaved. Walnut. Old Oak trees. Old Apple and Pear trees, some killed.

TOTALLY KILLED.

Ilex cornuta and *I. latifolia*. *Cupressus Knightii*, *C. Uldeana*, *C. Goveniana*, *C. Correyana*, *C. Lambertiana*, *C. macrocarpa*, and *C. funebris*. Chinese Privet. *Libocedrus chilensis*. *Pinus Craigiana*, *P. insignis*, and *P. radiata*. *Thuja neapolitana* and *T. glauca*. *Juniperus Wallichiana*, *J. Gossainthana*, *J. bermudiana*, and *J. Bedfordiana*. *Ivy Regneriana*. *Berberis Fortunei*. —JAMES SMITH, *Darley Dale Nurseries, near Matlock*.

ARRANGING FLOWERS IN BOUQUETS AND VASES.

(Continued from page 272.)

STANDING-UP BOUQUETS.

THERE is another mode of arranging flowers of which we have not at present spoken, yet it is a very useful and effective plan.

Any common flowers do very well in this way. Very choice flowers, indeed, are rather wasted for such a purpose, while a close mass of common flowers will, at a little distance, answer extremely well.

For these great, flat, one-faced nosegays the usual way is to select, first, some large and flat green spray. Box does well, and so does Fir. It must be very stiff, and if the ends are also pretty it is so much the better. Several pieces of green can be bound together to make up the required shape; and if the side branches are very

straggling, they should be woven in and out till they form a tolerably close mass.

Having arranged the background with a stem as long as you intend to make the flower-stalks, a large solid flower, or bunch of flowers, should be selected to form the centre. If on a soft stalk it will require mounting; and then, being thrust straight through the middle of the flat green branch, must be bent down at the back and bound down to its stem.

Before I go any further, it will be well to mention that these flowers must be mounted on green supple stems—not, as for other forms, on short square bits of deal. Green Hazel or Willow stems do well, but any green stems answer equally, and the flowers should be bound firmly on with a little of the common galvanised zinc wire.

A white Dahlia is a most beautiful centre for a bouquet of this kind, or a white one edged with pink; and the flowers can either shade off from it, or there can be an exceedingly dark centre, with the flowers gradually growing lighter as they approach the outer edge.

Geraniums are very beautiful in this style, and so are all the large transparent flowers—Azaleas, for instance, and Lilies and Passion-Flowers. Passion-Flowers and Geraniums, with Roses in the centre, would be very beautiful.

Fuchsias can very well indeed be used for vases that are filled in this way, both for drooping over the edge and for the outer circumference of the whole.

The very clear white kind with brilliant pink or scarlet tube is the best sort to use; and crimson sprays look very well, arranged with these, around. Very clear bright crimson it should be, however; and the corolla should be of blue, not of a reddish-purple.

These Fuchsia sprays should be wired on to stems, no matter how short they themselves may be; and little wet pieces of cotton or gutta percha should surround these stems and be carefully wired on.

Every flower-spray contained in these nosegays must be separately passed through, the stem going through from the front to the back, and being there bent down and bound.

Many people, if the flowers with short stalks are numerous, lay the whole contrivance down on its back in shallow water, so that it gets well saturated without any water touching the petals in the front. When taken out of the water, the flowers are merely laid down for a short time on a coarse piece of cloth to drain.

Repeating this process every night is a powerful means of keeping the flowers fresh and vigorous. Another most excellent plan for keeping flowers fresh is standing them at night outside a window looking to the west, so that they will not have the early morning sun. The cool night air and the dew in summer always seem wonderfully to revive them. This is, however, only *en passant*.

The flowers to use must be regulated by the style of the place that requires filling. For a large vase a good way from the eye very large flowers may be freely used. Dahlias for the centre and three or four more round; very large Roses, with Chrysanthemums or Carnations, to form a great part of the mass. Scarlet Geraniums and white flowers in this case are extremely useful in touches of bright colour put in about the outer edge, and in small masses elsewhere for light.

Verbenas do well: the kinds with a white eye, amongst the reds, are far the brightest-looking.

The centre requires to be very closely packed with flowers, though from each flower showing its full surface the quantity consumed is less than might have reasonably be expected.

Carnations come in remarkably well here, as do also the great white Lilies. White Geraniums and Roses though open to objection because of the petals falling,

can yet be easily cut short off, freshly-mounted flowers being inserted in their place.

I always avoid placing at the top of a large and high group like this, flowers that every one knows are very low in growth. And climbing Roses, Clematis, Honey-suckle, and Jasmine generally give one flowers enough for edging.

Tall sprays of blue Lupine do not look badly; Columbines and Snapdragons and Fox-gloves are pretty, and pale blue Irises are delicately lovely.

When the bouquet is not to have a solid-flower centre, I think it is best to collect two or three flowers of the most decided colour, to form there something that may be a starting-point. Under all circumstances, however, it is from the centre that we should work—not, at least, the exact centre, but the centre of the front, just above the hand, only allowing room for a drooping lower spray.

Many persons back the whole with a fresh spray of foliage, something that has points of a pretty green; and this is so far good that it can be changed almost daily if it should become faded.

A BASKET OF FLOWERS.



I know not what flowers to describe for this, it is such an all-season composition.

It is low and wide and has a tall light handle, and over the edges Ivy leaves are drooping.

The stem of Ivy is twisted round the handle, and the green leaves all round are so thickly placed as almost to hide the basket itself entirely.

Being a group for all months we may take the first and describe our January basket.

A cross-bar of green should run all through it both ways, dividing it into four distinct compartments, the green surrounding all forming a graceful frame.

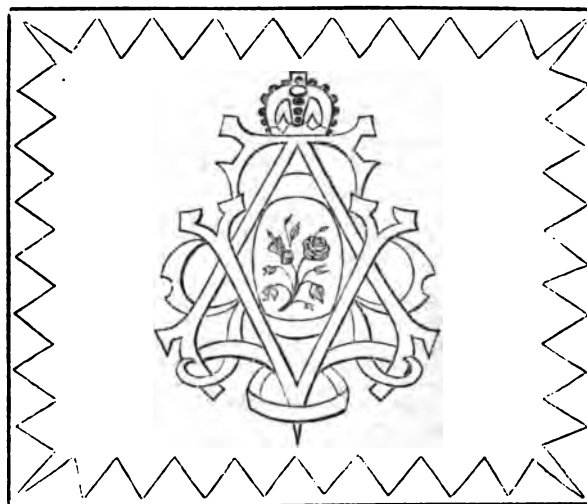
If none of the divisions are filled with white there may be a double line of it, or a line on one side, the green all round making an edging. White Azaleas for this are very beautiful, Snowdrops being certainly not less suitable. A corner full of wild Primroses arranged in leaves (in real good country places one always knows of some bank that even in January is not hopeless of sweet little yellow buds) would be very pretty, and forced Violets next to them; or pink Hepaticas, and at cross corners with the Violets some of the pretty Scillas, or a group of encircled Crocus.

Pink Hyacinths and sulphur-coloured Primroses, blue

White Azaleas and Snowdrops are also beautiful. Also white Roses, crimson Roses, and delicate buff Tea-scented kind with lilies.

lovely they are, the more their green frame shades them the more they will be admired.

In the floral paper of July 3rd there was accidentally inserted an unfinished paper. The writer had come to a standstill in the difficulty of choosing a suitable and appropriate pattern, and then by an oversight the paper went to press. It was, in fact, feared that the difficulty of even the slight amount of shading required in the Rose-Shamrock-and-Thistle pattern would render it less useful than others might prove to be.



We have, therefore, adopted the pattern of a frame that was engraved in the "Art Journal." The letters V. A. R. forming a monogram, and surmounted by a crown. This will enable us to explain our meaning, while the letters themselves are of the most popular.

In this pattern the band-like stems of the letters may be made of any width proportioned to the whole size. They should be entirely of gold colour; or the shaded side of each in gold colour and the other in white. Gorse, Laburnum, Cowslips, Buttercups, and Broom are all good flowers for it; and for the white, Guelder Roses, May, Rose leaves, Verbenas, Violets, &c.

The ribbon bearing the motto should be blue or crimson, with the letters gold-coloured. Geraniums, pink May, red Roses, or Stocks do well.

The royal crown which surmounts the monogram should be, of course, mainly of gold; and thus generally the tracery consists entirely of that colour, with a little white, and crimson or blue according to the tint determined on for the ground; for which Royal Blue (Larkspur, Blue Bells, Iris, Hyacinths, &c.), is much to be recommended, though crimson also would look extremely well.

Whichever is the ground colour, the other will have to fill the frame inside. And on the outer ground the colour of the crown jewels must in a degree depend.

Pearls, represented by Snowberries, small white Roses, or Lilies of the Valley, or double Hawthorn, or white Verbena would look very well in the circles; or so would rubies if the ground is blue, made of Scarlet Geraniums or red berries, the berries answering best of all for this innocent sort of "paste."

The squares, of course, are also for some bright-coloured gem, emerald green, or ruby red, as may look the best.

The inside of the frame might be filled with a bouquet of large gay flowers, on a white, crimson, or dark blue ground. The edge is well finished by a simple Vandyke, or shell pattern.

E.
(To be continued.)

GREEN'S MOWING MACHINE.

HAVING seen in your last week's paper a paragraph relative to the sharpening of mowing machines, in reply I am glad to say I have entirely remedied the small difficulties which the gardener in using a mowing machine had to contend with. I willingly admit, as you have stated, that when the machine is properly used it will go some considerable length of time without sharpening; but I found that when required to be done it often not only took the skill of an intelligent gardener to test, but in many cases that of a mechanic. In consideration of this I have made the following alterations:—The cylinder has a pinion on each end, and the cutters being steel on both sides, by reversing the cylinder it becomes self-sharpening. This I have found to act admirably,

and consider it to be the *se plus ultra* of self-sharpening. Further, I find that remark is made as to the slipping off of the chain. In reply, I am happy to say this is entirely remedied by means of a small flange which we have screwed on to each wheel.

In proof of the above statement I beg to refer any gentleman to the Royal Horticultural Society's Gardens, Kensington, where several of my machines are kept constantly at work; the Crystal Palace Company, Sydenham; and also the Royal Botanic Gardens, Regent's Park, where they may be also seen daily at work.

In conclusion I beg to thank the author of your paragraph for his admiration of Green's Lawn Mower.—THOMAS GREEN.

VRIESIA SPECIOSA.

THIS is a most brilliant plant, for not only are its leaves variegated with zebra-like stripes, but the crimson of the bracts of its spikes is very bright and long-enduring.

The genus *Vriesia* belongs to the Natural Order Bromeliaceae, and to Hexandria Monogynia of Linnaeus. It was named after Dr. W. de Vries, Professor of Botany at Amsterdam. It is certainly a native of South America, and probably of the vicinity of Rio Janeiro. It first bloomed in this country during the spring of 1848, in the stove at Kew. It was first introduced to Europe by M. Neumann, who sent it to the Jardin des Plantes, at Paris, under the name of *Tillandsia splendens*. Coloured portraits of it are in the "Botanical Magazine," t. 4392, and in the "Gardener's Magazine of Botany" for 1850, vol. i., 217.

Leaves radical, a span or more long, lorate oblong, canalliculate, or almost semi-cylindrical, very concave at the base; the margin entire; the apex inflexed, blunt, but tipped with a mucro; colour dark green, with black transverse bands. *Scape* arising from the centre of the leaves, a foot and a half long (including the spike), terete, scaly, green, with black spots; this is terminated by a compact spike of lanceolate-acuminate, complicate-compressed, carinated, closely imbricated bracts, each including a single white flower. *Flowers* longer than the bracts, cylindrical, curved, soon withering. *Calyx* of three oblong, scarious, obtuse, erect sepals. *Corolla* of three linear-spatulate petals, with two scales within at the base. *Stamens* six, rather longer than the petals. *Ovary* almost, if not quite, superior. *Style* filiform, longer than the stamens.

Though the flowers themselves are ephemeral, yet the plant continues for a long time exceedingly ornamental; the most showy part—the spike of richly-coloured bracts—being very enduring. Gradually the bright scarlet of the lower bracts becomes duller, and eventually greenish, and at last this colour extends over the whole spike.



GOOSEBERRY-TREE CATERPILLARS.

Is there any known remedy for the pest now infesting this neighbourhood, the Gooseberry caterpillar? We have tried—1, lime water; 2, branches of Elder stuck in the bushes; 3, branches of Whin or Gorse in the same manner; 4, white hellebore, in solution of water; 5, soot; 6, shaking the trees, and besmearing the stems with train oil; 7, dredging with fresh white hellebore; 8, syringing with Gishurst Compound—many of which applications have been suggested in your pages, all to no purpose. The discoverer of some efficient and certain cure would be a notability of the age.—FILLINGHAM.

[We never knew white hellebore powder, dredged upon the bushes two or three times by means of a tin pepper-box, fail in clearing them from the caterpillar of the Gooseberry saw fly. It is essential that the powder is fresh—that is, of the previous year's growth and preparation. Hellebore powder that has been long in a druggist's stock has lost most of its power. That fresh powder diligently applied will destroy the present brood; and tanner's bark spread over the soil about three inches deep will prevent the caterpillars descending into the earth. They become pupae in the tan, which may be removed and burnt. The fol-

lowing is Mr. Curtis's account of this marauder, its parentage and habits:—

"This insect was described in 1828 by a French author, Le Pèletier de Saint Fargeau, under the name of *Nematus trimaculatus*; and it is also called *N. ribesii*, *Tenthredo grossulariæ*, and *T. ventricosa*; but the first name has, I believe, the right of priority. The fly is of an ochreous colour; the antennæ are almost as long as the body, setaceous, brown above, and nine-jointed, the two basal joints small; the crown of the head, eyes, three large united spots on the centre of the trunk, as well as a large patch on the breast or sternum, are black; the body is orange, sometimes bright; the wings, which expand two-thirds of an inch, are iridescent; the reticulated nervures, the thickened costal edge of the superior wings, terminated by callous spot, called the stigma, are brown, as are also the tips of the hinder shanks, and their tarsi or feet.

"The flies emerge unheeded from their tombs the beginning of April, and the female soon deposits her eggs close to the sides of the principal nervures on the under side of the leaves, which is very remarkable, for all the females of this extensive family are furnished with an instrument called the saw, for the purpose of cutting into the leaves and stalks, and introducing the eggs between the cuticles, or under the bark. In about a week the larvæ hatch, and commence feeding on the leaf on which they are stationed, and soon riddle them full of small holes; thus they go on feeding and changing their successive skins as they increase in size, until they are three-fourths of an inch long, when they are seen scattered round the edges of a partly-demolished leaf, holding by their fore legs, with their tails turned up, or lying on one side. At this time they are dull pale green; the first thoracic segment is deep yellow, and the penultimate of the same colour; the head, feet, and tail are black, and each segment is dotted with the same colour, some of them having twenty-four spots ranged in rows down the back, those on the sides being more irregular, and one near the base of each foot is large; every one of these black tubercles produces a hair: they have six pectoral sharp, horny feet, with which they always hold fast; the fourth segment seemed to be destitute of feet, but the six following were each furnished with a pair of fleshy legs which assist them in walking, and there is a similar pair at the extremity of the last segment.

"There seems to be a succession of broods, from the early spring until October occasionally; but the greatest numbers are congregated in May and the beginning of June, when, I understand, they have caused £20 or £30 of damage in a market garden near London in one season; but in the neighbourhood of Blandford, last year, the second attack upon the Gooseberry bushes in July and August was, if possible, more devastating than the first. Having defoliated a bush, leaving nothing of the foliage excepting the footstalk, and sometimes a portion of the main rib; and, being arrived at maturity, they cast their skins again, and then lose all their black spots, becoming of a uniform pale green, with two little black dots on the head, the spaces behind it and towards the tail retaining the yellow tint. After resting awhile, they descend into the earth, and spin a yellow-brown cocoon, formed of silk and gluten of so thick a texture that it is impervious; from these the summer broods of flies come up in less than three weeks, but the autumnal ones remain in them, curled up in the larvæ state, until the following spring, when they change to pupæ in time to produce flies, as the Currant and Gooseberry-trees are coming into leaf."]

POMOLOGICAL CLEANINGS.

THE BUCKLAND SWEETWATER GRAPE.—This very excellent, hardy, and prolific variety has in one sense been wrongly named, for it has no relation to the Sweetwater race, taking as the type the old Dutch Grape known so well under that name, and of which there are so many varieties all closely allied in habit; for without one exception they are all more or less, according to circumstances, inclined to what the French Vine growers call "couler." We have no word to answer to this as technically applied; for, as commonly used, it is to flow, and also, according to Dufief, to blight. Our expression is "setting badly"—i. e., in many cases only one-third or one-fourth of the berries grow to their full size, the others on the same bunch not swelling, but remaining of the size of very small Peas. The Buckland Sweetwater has not this fault, but sets as freely as a Black Hamburgh, the former being like a very inferior Black Hamburgh.

If its leaves and habit are looked into it will be found quite different to the Sweetwater race, and a pure Hamburgh with leaves more deeply cut than the common sort, and approaching in that feature to the Richmond Villa Hamburgh, a variety not of much worth. It is the bold robust habit, and freedom in bearing and setting its fruit, that is so much to be admired in the Buckland Grape, and that will make it when well known supersede the Golden Hamburgh, which is a weak grower unless under very high culture, and more slow in coming into bearing than the Buckland. Some six, or seven, or more years since, the late Monsieur Vibert, of Angers, raised a Grape from seed, which has been named by his successor "General de la Marmora." By a strange coincidence this is identical with the Buckland in leaves, in its robust habit, and in its fruit. Monsieur V., with more judgment than our pomologists have shown, placed it among Grapes "étrangers au chasselas"—i. e., not a Chasselas Grape, under which name the French cultivators class all our Sweetwater and Muscadine Grapes. I forget the origin of the Buckland, but I think it was given when the variety was first exhibited at one of the meetings of the Pomological Society.

THE MUSCAT HAMBURGH GRAPE.—This has not been exhibited this season. It is to be hoped that it will be, for many growers complain that it produces small bunches, irregular in the size of their berries, and also irregular in ripening. The bunches exhibited at one of the meetings of the Pomological Society were superb, so that, probably, it may require some peculiar mode of culture. Some of your correspondents can perhaps enlighten us on this head, and give some instructions as to the proper mode of culture. One amateur planted one vine entirely with this sort, but was so dissatisfied with the produce, that in haste he rooted up all the vines, and probably repented at leisure.

THE DUKE CHERRIES.—There is, perhaps, no group of fruit trees more interesting than the varieties of this class of Cherries. Their habit is so peculiar, agreeable, and so well adapted to the fruit garden; for either as pyramids, bushes, or even standards, they are always ornamental and fertile. I have this season had all the leading varieties under very close observation, as they have been growing in a small orchard-house, 20 feet long and 14 feet wide, devoted to Cherries, in which they are planted out in the borders and cultivated as pyramids. The first variety that opened its numerous clusters of pearly flowers was the Empress Eugénie, a variety recently introduced, and which was raised from seed at Fontenay aux Roses, near Paris. In about eight or ten days afterwards our very old friend the May Duke came into bloom, closely followed by the Archduke, Royal Duke, Duchesse de Pallnau, a variety raised from seed by Dr. Bretonneau, of Tours, a fine vigorous grower forming naturally a pyramid; and, lastly, Nouvelle Royale, a new introduction from France, and one of the latest of the group. The "Late Duke" Cherry, a sad misnomer, has but little if any affinity to the class. In ripening, these varieties have succeeded each other nearly as follows:—First, Empress Eugénie, and in about a week afterwards the May Duke; then followed the Archduke, Royal Duke, Duchesse de Pallnau; and, lastly, Nouvelle Royale. All the above have the brisk, sub-acid flavour peculiar to our well-known May Duke Cherry, and all are good; but I have been particularly struck with the earliness and prolific habit of Empress Eugénie, and the large size and lateness of Nouvelle Royale; as far as can be judged this fine variety will last all through July till far in August. Its leaves are large, roundish, and of the richest dark green. A Spanish Cherry very nearly allied to the Duke Cherries is likely to be interesting, its Spanish name translated is "Love-Apple Cherry," because of a faint resemblance to the fruit of the Tomato, in being divided by sutures into three divisions; in flavour it is like the Duke Cherries.

Query.—Why is the Tomato called "Love Apple?" Is it because but few English people love it?—T. R.

THE POTATO DISEASE.

THIS murrain, blight, or disease, is said to have first appeared in this country during the autumn of 1845; and to have been first discovered in 1842 at the Isle of St. Helena, the exile home of the great Napoleon. However, I humbly beg to be allowed to state that there is not the least proof of its not being known in England prior to 1845. On the other hand, there is evidence in abundance to convince even the most sceptical that the Potato is liable to, and has been diseased like every other cultivated

plant more or less since its introduction into Ireland in 1586, though it was not until the year 1791 that any remarkable destruction of the haulms or tubers by disease is recorded.

In 1791 we have the first notice of the "dry rot" in May, and during the autumn of the same year "the wet rot" was very prevalent. The wet rot was more or less prevalent during the years 1791, 1797, 1801, 1807, 1814, 1815, 1825, and 1828. If we look carefully at the above dates we shall perceive something peculiarly interesting. In 1791 there were riots in Birmingham and other places, partly owing to the want or scarcity of provisions. This very year the dry rot prevailed amongst the Potatoes. I take this dry rot to be a rapid decomposition of the tuber that has been diseased previously to planting, but owing to its being kept in a dry place before planting did not decay; yet when placed in a moist soil the tuber rapidly decomposed. I believe the spores of the fungus to have entered the cellular tissue of the plant the previous season.

In or about 1791 commenced a series of years of scarcity, and continued until 1818. A want of provisions stimulates the producers to increased and superior modes of cultivation. The wet rot appears to be identical with our murrain. The "Old Gardener," to whom I am indebted for the dates of the prevalence of the rot, describes the rot thus:—"After harvest the Potato fields emitted a peculiar smell, very nauseous, or so bad that it sometimes caused me to have the English cholera, which I never had at other times; and when we took up the crop to store in October nearly all of the Potatoes were rotten in the hollows of the field, while those grown on the higher parts of the land were not so bad." Will any one point out the difference between that rot and the more recent, for I must confess that I cannot perceive any? It is evident, then, that the Potato was subject to rot or disease at least seventy years ago. But as manuring was not carried out as it was after 1810, the Potato remained, with few exceptions, in almost its original condition; and, not being subjected to repeated strong doses of stimulating manures, was not so liable to disease as it is at the present day. All the difference I perceive to be anywise worthy of notice is this—they were rotten in the ground then, and so they would be now if left in the ground until October or November. When I was a lad (I am only in vigorous youth yet), Potatoes were seldom planted before May for the main crop, and it was considered quite soon enough to have them taken up so as to be stored away before November was out. We take them up in August now, and use them (diseased tubers) to feed pigs, &c.; and if we consider in addition the drainage of our fields, we shall see at a glance why they are not rotten now the same as formerly.

The Potato is very difficult to trace to its native habitat. Some say it is Peru (near Lima), whilst Mexico is fixed as the place of its origin by others. Whether it comes from Peru or Mexico, the days there are hot and the nights cold, or, in other words, the range of temperature must be great. Moreover, there will be a season of rapid growth (owing to the moisture), and another corresponding period of dryness, when the juices of the plant must be concentrated in the tubers from the parching heat. Another difference endured by the Potato is in the manuring. There is double the quantity applied now, compared with formerly, to a given quantity of surface. The consequence is, that the produce is doubled; but, on the other hand, we lay the foundation of disease by too strong manures applied at distant intervals, and at a time when it is least required by the Potato. Why? Because the leaves are not able to digest the watery and crude sap impelled into them from the roots stimulated by excessive manuring—so excessive that the leaves cannot sufficiently perform their functions, so that the sap descends the stem in an undigested state to the tubers, and the whole system consists of deficiencies. Starch is the chief constituent of the Potato (excepting water); but in a Potato infested with blight the quantity is very small, frequently no more than 2.30 per cent., while in a sound condition it contains, on an average, as much as 15.72 per cent. (See Hogg's "Vegetable Kingdom.")

If we place a number of Potatoes—say twelve the beginning of February, (when the temperature of the earth at 1 foot deep may range from 35° to 40°; 36° is the average of the first week from twelve years, mean), planting them 4 inches below the surface, we shall find they will not grow (sprout) until the temperature of the earth attains 41°, and that they do not grow rapidly until 45° is attained, which takes place the last week in March generally. We may also observe that until the temperature of the air at 4 feet becomes equal to the temperature of the earth at 1 foot deep, the shoots will not appear from under

the soil, or not until the temperature reaches 50°—the latter part of April, or beginning of May in ordinary seasons, but liable to exceptions, the 8th of May is the average of twelve years of its being that temperature in this locality. Soon after Midsummer the earth attains here a temperature of 61° as the average, and 62° that of the air (mean). The mean maximum being 78°, and mean minimum 46°, on an average. The average of twelve years fixes the date of that period of comparative rest belonging to the economy of Nature as the 8th of July here. Greater part of the trees have made their growth for the season by that time. The Rose tribe blooms and seeds, and Wheat flowers and sets. Some few exotics remain in a state of torpidity, and the Potato is one of them.

Let me now be permitted to state some practical results. I propose to choose a plot of ground 21 feet long and 10 feet wide, in an open situation, divide it into seven equal parts, or so that each part will be exactly 10 feet long and 3 feet wide when divided. Dig the whole with a fork, and be sure the whole is done alike. Provide seven labels, numbered 1, 2, 3, 4, 5, 6, 7. Place one in each of the parts. Manure No. 1 with one bushel of ordinary dung, spread it equally over the surface, fork it in, and do the same way with the next four. No. 2, 2 lbs. common salt. No. 3, 2 lbs. muriate of potash. No. 4, 2 lbs. sulphate of ammonia. No. 5, two bushels of charred vegetable refuse. No. 6, no manure of any kind. No. 7, to be planted in the ordinary way, by making a row along the centre 6 inches deep, putting two bushels of dung in the row, and then six sound tubers (as far as the eye can guide), and cover them with 4 inches of soil. Make a row along the centre of each rectangle 4 inches deep, placing therein at equal distances six Potatoes, cover with soil, and hoe, earth up, and make notes on which grows the strongest, the quickest, &c., in a book, for the memory must not be trusted.

I planted the York Regent (but that is immaterial), only let it be some round kind, and by no means a seedling of less than six years' growth. Let the Potatoes be of one sort and of an equal size, for partiality is useless in experiments. Something more, and then the experiment will be in order—Put six seedling Potatoes in six nine-inch pots the second year of their existence, plunged in the open ground, and to remain there until further orders. We plant them all unsprouted on one day, and that the 1st of April.

No. 7 appears above ground the first; No. 4 will be second; and No. 2 the last.

No. 4 grows the stiffest, most erect, and branches close to the ground, producing altogether a strong, sturdy, abundant, haulm. No. 3 the same, excepting there is rather less haulm. No. 1 much the same as No. 3, but if anything less haulm. No. 5, strong, short, erect, branching near the ground, colour dark green, and every way the best top of the whole. No. 6, a good, short, moderately strong haulm. No. 2, long, strong, abundant, branches little, and straggles on the ground, altogether having more haulm than any of the above. No. 7, long drawn, weak, pale green, somewhat branching, trails on the ground, and producing more top than any of those mentioned. There are more peculiarities worthy of notice, but the above is the pith. The month of July is with us, and it may be the beginning of August, perhaps, before the disease appears. However, when it does come, which may easily be perceived by the brown spots on the leaves and haulm, fetch the six seedling Potatoes (which will not be diseased), plunge them near No. 7 (for they will be the worst attacked by the disease), so that the haulms of the seedlings and those of No. 7 can be tied together. Tie them with Cuba bast, and the result will be that the seedlings will not be attacked by the fungus although in contact with the diseased haulms of No. 7.

From the seedlings we learn that until some peculiarity becomes developed in the plant, no fungus acts upon them. No. 7 shows that strong, stimulating manures produce a fit state of the plant for the fungus (*Botrytis infestans*), and if the last be permitted to remain in the soil until October, and August or September is wet, the rot will prevail exceedingly amongst the tubers—in fact, they will be rotten. No. 2 escapes the disease the longest; No. 5 the next; and No. 6, with the two last, will suffer very little from the disease, if August and September be sunny and dry. Moisture is an essential for the development of fungus, and should the hygrometer show a mean humidity of less than 85° (Saturation=100), we shall not experience much disease amongst Potatoes. No. 3 stands the disease well; No. 4 not so well; and No. 1 escapes with few injuries.

Their productive returns may rank in the following order;—No. 1 produces 9 lbs.; No. 2, 12 lbs.; No. 3, 14 lbs. 8 ozs.; No. 4, 13 lbs. 6 ozs.; No. 5, 14 lbs. 10 ozs.; No. 6, 9 lbs. 11 ozs.; No. 7, 15 lbs. 7 ozs. These are my results, but very much depends on the nature of the soil and the season.

I will state how to work when the disease occurs. When the fungus is first seen on No. 1 pull all the haulms up, placing the foot so as to prevent the Potatoes being drawn up too. Cut the tops off No. 2 close to the ground. In a fortnight afterwards take both up, and we shall find the disease a little on No. 2's tubers, but none will be diseased in No. 1. Place No. 1's tubers in a box, in moist silver sand, and place it in a dry place where the temperature ranges from 85° at first, to be gradually raised to 120° during a fortnight; no water must be given them, and there must be holes in the box to let the steam out. Treated in this way the tubers do not rot when stored; and planted the year following in land not rich, only allowing them to have the dew from above, they will not be diseased. No. 2 to be stored away in the usual way, after having taken all the diseased tubers from them, and some of the apparently sound tubers will be diseased if examined in the spring, or should we plant them we shall have the dry rot, the self and same as our fathers had. On No. 3, Gishurst Compound in a solution of 4 ozs. to the gallon of soft water destroys the fungus; but unless the cause be removed it is useless, for it re-appeared in a few days, and continues to do so, so long as there is any sap in the haulm, all the time the tubers were getting worse daily. I tried sulphur on No. 4, quicklime on No. 5, and salt (a solution made of 1 oz. of salt to the gallon of water) on No. 6. The two former were in effects similar to those treated with Gishurst. But No. 6 showed no symptom of disease when taken up, and only eight tubers went bad afterwards.

From the above and a few more notes (not given at present) I draw the following conclusions:—1st, That the fungus (*Botrytis infestans*) is not the cause of the disease, but is its consequence. 2nd, The cause is a deficiency of digesting power in proportion to the food taken up by the roots, that deficiency being brought on by a long course of strong stimulating manures, which have made the plant tender, as has been the case with Celery, Cabbages, &c. 3rd, That when a plant (particularly a tuberous one) becomes tender under high cultivation, it requires more heat and dryness to perfect the growth than one that is not only on a poor soil, but even more than a plant that is moderately fed.—GEORGE ABBEY, *Gardener to E. Hailstone, Esq., Horton Hall, Bradford, Yorkshire.*

VARIEGATION OF THE LEAVES OF PLANTS.

IN one of your contemporaries is an article by "AN OLD SHOWMAN," on a subject which is at the present time very interesting, and it opens a field for discussion among our "practicals" and scientific men which may lead to results of exceedingly useful character—I mean the variegation of plants.

The writer of the article chiefly alludes to "variegation in Pelargoniums," and contends, with some appearance of truth, that variegation is disease, and that view is to a certain extent held by that great hybridist, J. Anderson, Esq., of Edinburgh.

"OLD SHOWMAN" says, to quote his own words, "As to the primary cause, I consider it to be water absorbed by the roots while in a state of decomposition, [query, is it possible for water to be in a state of decomposition?] or some of its constituent parts, and to be absorbed by healthy roots, and then some chemical change takes place which affects the tissues; but of which change we have not at present a perfect knowledge."

Mr. Anderson says, "I could never regard it (variegation) in any other light than as diseased," and then, in the next paragraph, Mr. Anderson says that he generally holds "OLD SHOWMAN" to be correct as to the true cause or "primary cause"—viz., "improper drainage, by which plants get saturated with water and poor soil."

With deference to both, I contend that variegation is not disease. "OLD SHOWMAN" is correct without doubt that "there are fixed laws which govern the cause as well as the effect," but let us first find out the cause; we know the effect as seen in the beautiful marked Pelargoniums, Begonias, Ivy, Follies, Yews, &c. If it is disease caused by defective drainage and poor soil, and not a chemical change from some other additional cause, according to the regular course of nature, the plants would not be diseased, but they would be diseased, and the disease would be the same as that which is called by the name of variegation.

variegated sport back again to its original colour; but who ever saw the Ribbon Grass (*Phalaris arundinacea*) run back permanently to its original plain green, grow it how you will and in what soil you will? Or, take the Auricula again. Who ever saw that under any circumstances or treatment as to soil, &c., returning to a permanent green?

"OLD SHOWMAN" says, he has never been able to raise any variegated plants of Pelargoniums from seed, but believes Flower of the Day was so raised; but I have reasons to think that the latter was not a seedling, but a sport, or, if he will have it so, a "diseased" branch of a Scarlet Geranium which was growing trained at the back of a nobleman's greenhouse a short distance from Richmond. This I do know, that Flower of the Day seeds freely, and I once raised a batch from it and every seedling was variegated, or diseased, from the seed-lobes.

But Mr. Anderson, I think, very clearly proves by one of his experiments that it is not disease any more than the various markings, or spot, or clouds, in a Pelargonium fruss is a disease. I will quote his remarks for the benefit of your readers. "Some eight or ten years ago I happened to be on a visit to some relations in Perthshire, and calling at Altamont I was presented by Lady Ballingal with a white-flowered species of the common Scarlet Geranium, a thing I had never seen before, and from which I hoped great things by crossing. I crossed it with Tom Thumb, then and still a very fine kind, and my highest expectations were from that cross; for I had inverted the cross, making the scarlet species the seed-bearer. From the seeds sown of these respective crosses, the product of the white-flowering kind was utterly worthless; they were tame, common-looking things with pale washed scarlet flowers, all having common, uniform green foliage. As I set little store by the inverted cross, the seeds I had saved and sown were few. But what was my surprise to find that most of the plants raised were less or more variegated in their leaves, some with uniform marking, others splashed with white colour, and as they got on some showing pure white foliage in some of the shoots, which, however, never advanced far.

"At a loss how this change of colour could arise, I therefore repeated the experiment by again crossing Tom Thumb with the same white-flowered plant; the result was still more remarkable. I had from twenty to thirty plants, scarce one of which did not show the white variegation in a very striking degree. I lost the greater part of this brood by a servant incautiously throwing the pits (where they were) opened to be aired one severe morning. That this cross of the white-flowered kind on Tom Thumb certainly produced plants with variegated foliage I had ample proof in the two experiments made in successive years."

The above remarks carry with them their own argument. If it is disease—i.e., variegation, whether in Pelargonium or anything else, how is this disease inoculated in the particular cross—that is, by Tom Thumb being impregnated by a white-flowering kind, and not diseased when the white-flowering kind is impregnated with Tom Thumb? Is there not something in the works of Nature that man cannot reach? Truly, there are set bounds in Nature which man cannot overstep.

I well remember some twenty-five years since, that at the residence of the late Robert Clarke, Esq., Lower Tooting, it used to be the system there to stand out, during the summer months, the plants from the greenhouse under the windows of the house. Among other things was a large plant of *Fuchsia microphylla*, which used to flower and seed freely there; its round dark berries, looking like currants, was itself an interesting object. The seeds as they ripened would fall indiscriminately round about where the plants stood, and seedlings used to come up by scores. Among others, the gardener, Mr. Northwood, observed one beautifully variegated, and of a more compact growth than the rest round about; he carefully took it up and potted it, and it grew there for some years. It was of a dwarf compact habit of growth, with a pale cream variegation, and would have made our friend Mr. Beaton say, "Good gracious! Here's a minimum *Fuchsia* for edgings!" but, unfortunately, it was killed by over or careless watering.

Now, surely, that was not disease, or, if disease, when and where was that disease engendered? Or take our variegated Arabis or Konigs, whichever it may be called, cultivate it as you will—soil, aspect, situation, temperature, in-doors or out—can that be forced back to its primitive green? Or, take a batch of seedling variegated Begonias and try them, will they succumb to the efforts of man, in eradicating their disease (variegation) by cultivation. It is contented that by frequent coverings by a

plain-leaved kind we might not get rid of their beautiful markings; but I mean solely by culture in different soil, &c.

Or, we may take another familiar example, and ask what is the (primary) cause: is it the effect of disease, of defective drainage, poor or rich soil, or is it some chemical effect produced by nature, and which is beyond the mental grasp of our great vegetable physiologists, much as they have done to raise and bring to light causes which have long laid comparatively obscure? I allude to the Purple-leaved Beech. I think there is as much ground for supposing that to be caused by disease, as there is to suppose that the beautifully-variegated Turkey Oak is caused primarily by disease; and I hold that the cases of variegation in plants, whether the Oak alluded to, the variegated Sycamore, or Elm, and the variegation of Pelargonium, or the variegated Strawberry, are analogous.

Let us, then, try and find out the correct cause ere we jump at conclusions, and call that disease which may not be a disease at all. Is it not probable that the same cause produces the effect in the variegation of plants and in the variation of the Auricula alluded to by "D., of Deal," a week or two since? Will Mr. Beaton be kind enough, as well as many of your learned and observant readers, to take up the matter and give us their ideas on this subject? There is an open and interesting field for discussion; and if we can find out the real cause we may produce effects surprisingly surpassing all we at present have for decorating our flower gardens and ornamental grounds.

I may return again to this subject, and at a future time give my reasons for supposing variegation not to be disease, but in the meantime should like to hear what others say on the subject.—NICKERBOB.

WORK FOR THE WEEK.

KITCHEN GARDEN.

PLY the fork frequently amongst the growing crops of Cauli-flowers, Broccoli, and winter Greens, and continue to manure and trench every piece of ground as it becomes vacant, and plant it with such like articles for late crops. *Cabbages*, reserve and get ready a patch of ground for the sowings to stand the winter; the soil to be of a light sandy nature, and not too rich, as it encourages a luxuriant growth, which is apt to make them tender. *Celery*, prepare trenches for the late crops, water the growing crops, and stir the soil around them. *Cucumbers*, keep up the heat from the linings to them and the Melons. Although we have an average of solar heat this summer, it is better to keep bottom and top heat regular. Cucumbers and Melons delight in plenty of heat to keep them healthy and in regular bearing. Give good soakings of manure water occasionally, and shut up early on all fine days, sprinkling the sides of the frames and sometimes overhead. *Endive*, plant out finally the strongest from the early sowings, and sow also more for late crops; the small Green-curbed is best. *Herbs*, when in flower to be cut and dried for winter use. Choose a dry day, and pull or cut them just as the bloom begins to expand, and spread them thinly in a dry shed, which is preferable to drying them in the sun. When dry they can be tied in convenient bundles and hung up in their winter quarters; but a better plan is to strip off the dry leaves and bottle them. *Onions*, pull up the winter crop if ready, lay them in rows with the roots turned to the sun, and frequently turn them until the stalks are withered, when they will be fit for storing. As they are liable to decay if bruised, they should be carefully handled; let them be very dry when stored, and spread out thin—not laid in heaps. *Peas*, the late-sown to have attention paid to watering and staking. *Potatoes* to be lifted as fast as they become ripe, and their places to be filled with winter Greens. *Shallots*, if they are left in the ground after they are ripe they are apt to mildew: they should therefore be taken up as soon as the tops begin to decay.

FLOWER GARDEN.

The various *Roses* to receive constant attention, such as good staking, disbudding, stopping, top-dressing, or liquid-manuring and budding. *Fuchsias* require much and regular waterings; and it would be well to apply short or neat mulchings, or sphagnum moss, over their roots. Single specimens recently planted in lawns to receive similar treatment. It is a very good plan with the latter to cut out a definite circle of the turf, and to cover the whole surface 2 inches thick with neat pebbles. This will screen the roots and break the action of the water, which is apt to prove injurious by puddling the surface.

FRUIT GARDEN.

Young Peach and Nectarine trees when making very vigorous leaders to have the points of the branches shortened, to be succeeded by other shoots less vigorous, but more fruitful. The Currant bushes to have some of the extremities of the late growths cut away, cutting a handful or two also from the interior of the bush when gross. Layer the Strawberry runners intended for pot culture, as well as those required for making new plantations; all spare runners to be cut away, and the plants to be kept free from weeds. Thin and stop shoots of Figs as soon as they have made a growth of about 6 inches. Remove all useless growth from Vines.

GREENHOUSE AND CONSERVATORY.

The season has now arrived when those hard-wooded specimens which require a second shift this season should have it without delay—at least, before the end of the month, so that the pots may become well filled with roots before the autumn, to be guided when shifting by the strength of the plants; if they are growing robustly give them a liberal shift, but if not a smaller one will suffice. Such stove plants as may have been removed to the conservatory while in bloom, to be returned to a higher temperature as soon as their beauty is over, that the young wood may be ripened before the days get too short and dark for that purpose. Also some of the stove plants that have been recently brought into this house, will require attention to prevent their being injured by damp during shady weather; and it will, probably, be necessary to use slight fires occasionally, for the purpose of drying the atmosphere of the house. The propriety of this will, however, greatly depend upon circumstances, for in small ventilated houses damp will hardly be troublesome, whereas in lofty houses, with but little ventilation, and the roofs overgrown with climbers, it may be very troublesome. As at this season there is no danger to be apprehended from cold, air should be freely admitted on every favourable opportunity using every care to keep the atmosphere of the house as dry as possible, and keeping the plants clear of decaying flowers, &c.

W. KRAM.

DOINGS OF THE LAST WEEK.

WEATHER much the same as before, but a splendid day on the ninth; and the sun acting on a moist, warm soil, seemed to make Lettuces and Cauliflowers in the kitchen garden, and Perillas, Pelargoniums, and Calceolarias in the flower garden, grow by inches, if not as if the fabled wand of an enchanter had been waved over them. Have had a very good supply of *Dickson's Favourite Pea*, and find that after they are introduced, the youngest of Frames, Sangster's, and his worship Daniel O'Rourke, and ever so many more that we have a shrewd guess are sent out from one and the same bag, will be of little use except for gracing the servants' hall. Sent this day (the 10th), a fine dish of *Jeyes' Conqueror*, supposed by some to be synonymous with *Ne Plus Ultra*, and after that will have to act rather knowingly with even *Dickson's Favourite*, the one above being a splendid Pea for colour and flavour, and a splendid bearer into the bargain. The only objection against it for general adoption being its height, as in a dripping season we have required steps to gather it; but then if close-gathered it is almost as continuous a bearer as *Scarlet Runners* themselves. There is so little in common with such splendid Peas and the whole race of early ones, that the man who could introduce a Pea with such a flavour and size and as early as our common early ones, would deserve a statue from the public, and more than a handsome piece of plate from the gastronomic epicures of the generation. Even some of these wise men at the table are sometimes deceived. A chief in these matters passed by a splendid dish of these Peas, so young that they would scarce stand a touch of the fork, and wondered how such large old Peas should be sent to a table where so many knew what was what; and how eloquent he was about the flavour of the Peas he went to Covent Garden and selected himself, getting the basket-woman who shelled them there to riddle out for him all small soft ones; and how next to indignant he looked when the pea-grower courteously doubted his being at all a proper judge in the matter—first, because the sight and not the taste of the far superior Pea was all he knew about it; and, secondly, because from Peas riddled in Covent Garden, after coming there heated and packed in sacks, he knew full well that everything like flavour was banished. We know it is a common thing to twit the gardener in the

country about the fine Peas obtained from Covent Garden, and so there may be, if carried there in their layers for a particular order; but I will allow every gardener in a small place, who is dunned with the praises of what cannot at the moment be put in comparison, to use our authority for saying that the great proportion of Peas obtained in Covent Garden are not fit to be mentioned with those grown in their own gardens, if pulled or gathered before they are too old. If Peas travel a few miles in bags or large hampers, that will of itself destroy the fine flavour. Even when taken to the house at once from the garden, when the finest flavour is desired they should not be gathered long before they are shelled and boiled. It is all very well to shell Peas over night when quantities of older ones are required for us servants; but if such a practice is adopted with what goes to the parlour next day, the gardener need not be surprised if his best Peas should be destitute of flavour. For all the better sorts of Peas we never allow the pods to be pulled so as to injure the plant, and, perhaps, interfere with the roots; but the stalk of the Pea is broken over the point of an open knife, and this is done quicker than even by pulling, and no injury is done to the plant. I lately saw a nice row of Peas with fully a third of the plants flagging and decaying, and the owner was just sending a bundle of queries as to what could be the cause, or causes, of such a misfortune. He promised to use the knife in future. Large, fine-podded Peas require more care in this respect than small early ones. [We know amateurs who cut off every pod with a pair of scissors, and we know the pea-plants continue longer in bearing by such care.—EDS.]

Swept over the *Mushroom-bed* made in the open shed, and covered with a little straw loosely, having a covering of hay and litter above, not so thickly but that the air will pass through it, but thickly enough to keep the extra heat and dry air out, and maintain the surface of the bed in an equable state as respects heat and moisture. If litter, short, and at all damp, is allowed to be close on the bed, the spawn is tempted to run into it, instead of throwing up its Mushroom-heads. Earthed up and slightly covered another bed. The first is doing pretty well, but if the heat it had attained had been allowed to continue a few hours longer, the spawn would have been destroyed. Now is a good time to make *spawn*, as it may be expected to dry rapidly. Much of it is trod and beat out on the floor of a shed, and then cut up into pieces. The following is the plan we generally adopt:—one part of cowdung rather stiff, and one part horse-droppings, the fresher the better. These do admirably of themselves. As the cowdung may not be stiff enough, we generally add one-half part of dry litter, cut into lengths about 1 inch each, and half a part of road-sweepings. Whichever of these materials, they are all beat up and mixed until the heap resembles in consistence thick mortar. We then make it into bricks, having a wooden mould the size of a brick, made of two side pieces and two ends fastened together. The board on which we work is kept wet—a pail of water stands beside us. The mould is dipped into the water, and then placed on the working-board, and is filled from the heap, levelled on top after being pressed, and turned out on boards so as to be easily moved, and put under cover when the weather is wet. Two or three days afterwards, whilst these dung-bricks are lying on their broad sides, two holes are made into each by thrusting a finger into them, or, more lady-like, using a round piece of wood for the purpose. These are for placing bits of spawn in when the bricks are dry enough. A piece of cowdung is drawn over the piece of spawn, so as to be level with the rest of the brick, and after the bricks are turned several times, so as to be dry rather than wet, and which will bear handling well, they are built openly into stacks, and a little fermenting litter placed beneath and around them. These must be looked over as carefully as a *Mushroom-bed*; for if too cold the spawn will not run well, and if too hot, it will run too much and exhaust itself. The spawn-brick that is white all through, with threads not larger than the finest hair, is just as it should be; 80° may be considered a good average when the spawn is thus running. When a brick is done it should be removed, as if it remains it is apt to be overdone, and in the same heap some will be ready a month before others. Though generally made every year, it will keep a long time in a cool, dry place. We have had fine crops from spawn five years old. Very fine spawn may be obtained from most of the eminent London firms, but we have had bushels sent to us no better for the purpose than just so many bushels of dung; and, therefore, without at all interfering with the trade of our London gardeners, who are obliged to be.

constantly, had as well make a little for themselves, so as to be doubly sure.

Sowed more Lettuces, Turnips, Radishes, Endive, plain and curled: of the former, Fraser's is the best and hardiest we have met with, in common winters standing out without any protection. Sowed, also, the main crop of Cabbages for next season; planted out Coleworts as room could be had for them; and watered Celery, Cauliflower, Peas, Globe Artichokes, &c., the latter coming in. If when the earliest are cut with merely a couple of inches or so of stalk, other heads will come, and quite as good, from the axils of the leaves left on the stem—at least, they will very often do so. Thinned out and regulated Tomatoes, Cucumbers, Vegetable Marrows, &c. Thinned out Parsley-beds, leaving the dwarfest and best curled, and knocked up weeds wherever they presented themselves, and that is often and frequently enough. No doubt it is all right; but for the necessity of labouring we should soon be poor, fidgetty, melancholy beings.

In the fruit garden, merely repeated the operations of last week, using the finger and thumb among young shoots, and the syringe and engine on the foliage early in the afternoons of sunny days. It goes against the grain when we cannot praise new insect destroyers, as many of our cotemporaries do. Gishurst Compound with us has been no better than good old-established washes quite as easily made, cheaper, and less offensive. I find no fault with it, however, as it is useful to a certain extent, and in the hands of other people most likely is more efficacious than with us; but in some cases—as fly on Cherry trees—we found it would not kill the insects without killing the shoot as well; and that many other compositions will do as effectually. If I had a preference I would sooner use tobacco water made from tobacco 1 oz. to a quart or three pints, and as much size as would make the mixture slightly sticky when a little was squeezed between the two fingers. Another evil as respects the Gishurst—and especially if, after dipping the points of Cherry shoots in a strongish solution, the whole tree was syringed with a weak solution, as we might do with weak soap water, or lime water &c.—was that the fruit as it ripened had a nasty taste, which was only got rid of by heavy and frequent lashings from the engine and syringe with clear soft water. The trees and fruit were none the worse for that; but if the weather had long continued wet and dull we should have expected the best kinds of Cherries to crack from the washings, but the dry days at times and the gleams of sunshine prevented all that, and even the largest and finest fruit have scarcely a sign of cracking. This matter of cracking is a sore point with some, and a certain gent. may think he has caught me napping now, who tells me my head should be cracked for speaking of Figs being cracked before they were gathered, as that thoroughly unfitted them for carriage. If our critic's own head had been cracked just enough to let the light of information in, he would have seen that last week I spoke of Figs being gathered for immediate use, and not for packing, which is quite a different affair. We do not find fault with a good Orange that we may buy off a stall, though we suspect that Orange was rather green when gathered; but good as that Orange might be, we would not contrast it with its neighbour which hung on its tree in Italy or Spain until it was at its very best.

Unfortunate as this splitting or cracking of fruit undoubtedly is, it is not always an unmitigated evil. For present use it often presents the extreme of richness, as in the Fig, as stated last week. A slight slit in the side of a large Cherry is a hint its fine pent-up juices should be used. In Melons, a few fissures near the stalk, and these gemmed with rich, nectar-like globules, are a sign that if thus taken the Melon will be delicious. In general, however, as to keeping quality the cracking is a great drawback, and hence Grapes that are given to crack are for little use, as they generally begin to decompose as soon as a crack is formed. Of the causes of cracking in fruit we cannot say anything precise to-day.

The flower garden has received great attention; the beds have been tied, pegged, topped, and regulated according to their requirements. Calceolarias are in full feather, and Scarlet Geraniums and Variegated very fair for the time of the year. Hollyhocks, in general, will be late. Hedges of scarlet Salvia will be early. These latter, as well as the Hollyhocks and Dahlias, have had a little manure water to help them on. Boundary rows of Muck have also been so treated, keeping the water off the foliage. A bed similar to that described for Balsams the other week has been made and covered with light sand—soil for Pink

cuttings, to be inserted about one hundred beneath a common-sized hand-light. The best mode for making these cuttings, best for despatch, best for the old plants, best every way, is to catch each shoot on the plant near the base with the left hand, and about the second joint from the top with the right, then give a sharp pull with the latter, and the cutting comes to you clean out of the joint and socket; and if your bed is loose you may insert the cutting at once, by holding it between the thumb and finger, and gently firming it. We prefer, however, firming the sandy soil and making holes all over it, about 1 inch in the rows, and the rows 2 inches from each other, using a very small dibber like a lady's bodkin for the purpose. This secures the base of the cutting being uninjured by pressure. When the space for a glass is filled, before putting it on we gently throw a little fine sand over the cuttings, which fills up the holes nicely, when a slight watering is given by means of a fine-rosed watering-pot. Picotees and Carnations may be done the same way, but they require more heat to root them nicely. The old plants are much less injured than by cutting the young shoots off; and if pulled out as stated above early in July, the lower buds on the old plant will push freely and make nice shoots before winter, which will bloom in great masses the following summer.

The frequent showers left no excuse for weeds on the *walks*, nor yet for these walks being rough and uneven for the feet. There is no such thing hardly as getting a weed out of a walk when dry and hard, but they come out easily when damp. A few will appear whatever plan be adopted. We have no objection to a little salt, applied in spring or early summer, but we do not approve of using salt in autumn, as it has a tendency to make the walks moist and soft in winter. For this purpose nothing answers better than strewing the salt just as thick as to cover the weedy spots in a sunny day, and especially if you can count on two or three sunny days and dewy nights. Salt water, either hot or cold, will do the work more quickly as to time, but at greater expense and labour. A switch from the broom after such slight weeding and a roll, makes the walk as firm and smooth as ever. When several days are showery, it requires a little weather-wisdom just to hit on rolling shortly after the last shower, as, if done before, the rolling would be labour lost so far as the fine appearance of the walk is concerned. When walks are very rough they should be rolled when the rain almost stands upon them. It is always better to reduce the number of walks, than to have them in a rough, slovenly state.

The *lawn*, too, has had its share of rolling, cutting with the scythe and mowing machines. Some ask me how often a lawn should be cut to look nice. In common seasons once in eight days will keep it tolerable. To be very nice in dripping weather in summer, four or five days will be long enough. There is nothing about a garden more expensive than a well-kept lawn. It is so, do, always so, and nothing but a lawn after all to show for it, and yet some folks expect a place to be kept as cheaply as another place, the kitchen garden and forcing, &c., being similar; whilst in the first case the lawn contains a dozen of acres, and the other place not an acre nor the half of it. True, the *mowing machines* have lessened the expense of cutting, and even those managed by men alone (23 inches wide), are a great saving in labour, when contrasted with mowing and sweeping. Improvements are also constantly being made, and, of course, we welcome them, though the improvement is not always an unmixed advantage. Thus, we got one of Mr. Green's silent cutters, and really in comparison with all those on the wheel-and-racket system, it is a luxury to those who have it working near a mansion. But now I have got myself into hot water about Mr. Green's machine, for I had recommended it to a number, who write to tell me I ought to have known better, as the chain gets too long at one time, and too short at another. Well, I fear there is enough in it to deserve Mr. Green's serious attention with wear and expansion by heat. Our chain lengthened so that it would not go into the cogs of the wheel, and, consequently, had no influence in keeping the knives revolving regularly, and the work was more ragged than a head of hair, steps and stairs, as clipped by a beginner. To remedy this, we have taken out a link some half a dozen times to shorten the chain, and, of course, that requires not merely time but an exercise of patience when you are busy. Yesterday, during the forenoon, the machine worked well. In the afternoon it would not work at all. The chain had lengthened about three-quarters of a link too much, and we knew that if we had wanted to knock a link off, the chain then would have been too tight, and much too tight the next morning; and, therefore, recourse was had to a common

wheel-and-racket one of Samuelson's, which, notwithstanding all the racket, did its work admirably. The comparatively little noise owing to the chain instead of a toothed wheel, is the chief distinctive feature in Mr. Green's cutter, for in other respects the principle of all the makers is identical. I mention these facts as to the chain lengthening to prevent several letters appearing on the subject instead of one, and in hopes that some means may be devised for removing this one disadvantage from what otherwise is a desirable improvement. The noise of the common ones is very objectionable near a mansion.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely to The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

CUCUMBER GANGRENE (*A Subscriber*).—This ulceration of the fruit, like the somewhat similar disease in the Potato tuber, has puzzled most gardeners. We believe that it arises, like the spot in the Grape, and other ulcerations in forced plants, from the roots not being kept sufficiently warm to enable them to supply the sap required by the rapid development of the fruit and leaves in a high, moist temperature. If the bottom heat in a Cucumber-pit cannot be kept up, the temperature and moisture in the frame ought to be proportionately reduced; and where these balancings of demand and supply are attended to, we know that the fruit of the Cucumber is never gangrened.

BOOK ON BOTANY (*Linda*).—The best elementary book teaching the Natural system, is Hensley's "Rudiments of Botany;" but do not deceive yourself so much as to expect that you can at once identify plants by merely mastering the contents of an elementary work. After you have learned from that upon what the orders, genera, and species are founded, then you require some work upon the genera of plants, and on the species of plants, to enable you to identify them generally. If, however, you wish to confine the attention of your children to British plants, then Hensley's book which we have named, and Hooker and Arnott's "British Flora," would enable any one with the perseverance required to acquire a knowledge of a science to identify all British plants. Impress upon your children that no knowledge worth acquiring can be attained without much thought and much application. The first steps are always the most unattractive, because they involve the fixing on the memory the meaning of strange terms.

DESTROYING ANTS (*L. Pickard*).—The same remedies as are recommended at page 282 of our last Number, will do if scattered upon the surface of the soil in your Cucumber-frame.

BRITISH WILD FLOWER (*W. X. W.*).—The name of your plant is *Erythraea centaurium*.

ROSE CUTTINGS—VALLOTA PURPUREA (*A Subscriber*).—The best time to put in Rose cuttings is the last half of March, where there is a moderate hotbed to plunge them in, and three-inch little side shoots clipped off with a heel, is the best sort of all Rose cuttings, and with the heel no cutting needs to be cut at all. From Midsummer to the end of August is also the best time for very different Rose cuttings—that is to say, cuttings with heels, as in March, but to be put in the open ground, not in pots, but under a hand-light, or even quite free in the open air as most gardeners can do them; but learners cannot do them so cleverly as gardeners, and many of them lose every cutting for the first trial or two. The end of October is the best time to put in cuttings of half-ripened shoots in the open air, and the way to cut them is exactly the same as the cut under a joint for Scarlet Geraniums. Pink and Sweet William, Wallflowers and others, come best from slips, so do Roses; and the slipping is the same in all plants from the Oak to the Pink, and cuttings of all plants do best if they are done as cuttings of Scarlet Geraniums. *Valloia purpurea* is like a Laurel—never goes to rest by losing leaves like Currant bushes. It is more like the good old-fashioned blue broad-leaved Iris, only that it is very thirsty in hot weather. Keep it in a saucer of water out in the open air, and it will yet bloom this season.

DATURA ARBOREA AND DURANTA ELLISII (*M. F.*).—The young shoots of the Datura must not be stopped, as the plant flowers at the ends of the young wood. Your plant will bloom in the autumn, and, after blooming, all the young shoots should be cut back just like a potted Pelargonium. The same soil and the same treatment suit both the Pelargonium and all the perennial Daturas. Cuttings of *Duranta Ellisii* root very freely at this season without bottom heat and in the spring, just like cuttings of *Fuchsia*. The same soil as you would use to strike *Fuchsia*, *Verbena*, or *Calceolaria* cuttings, will do for the cuttings of that *Duranta*; and old plants of it like the very same kind of compost as a specimen *Fuchsia* for a show would need.

LONDON FLORA (*W. R. X.*).—There is no book that will enable you "to collect" the plants about London, but there are plenty of books which will enable you to identify them after you have collected them. If you are master of the Linnaean System, no book is better than Smith's "English Flora;" if you are master of the Natural System, then Hooker and Arnott's "British Flora" will supply the information you need.

PLANTS TO FLOWER IN WINTER IN A COOL GREENHOUSE (*W. H. M.*).—Hyacinths, Tulips, Crocuses, Snowdrops, Violets, Chinese Primroses, and Cyclamens must be allowed to rest in summer. Mignonette sown in July; Chrysanthemums for the early months; Sweet-scented Geraniums, Camellias, Epacris, *Cytisus Atticaea*, *Coronilla glauca*, *Daphne indica*, odora, and rubra.

LEAF (*W. X. W.*).—It is impossible to tell what genus the plant belongs to, it is so similar to the leaves of many genera.

CRASSULAS GANGRENE (E. W.).—A gangrene is the cause of your *Crassulas* dying down at the bottom of the flowers and the top of the shoots. Pure water from the syringe would not cause this gangrene, only, if too much of it, causing the parts to damp off in the usual way. The roots, probably, have been kept too wet. But when *Crassulas* get so forward as yours were, they should not receive one drop of water over their heads for the rest of the season, and if they never had a drop over them it would be still better. Be very careful if you make cuttings from the diseased plants that no gangrene is on them, for this kind of it is as infectious to plants, as the scarlet fever is to mankind.

STRAWBERRIES.—A white paper box has reached us with Strawberries smashed, and note with all the ink discharged by the acid juice.

CARROTS BLIGHTED (J. R. B.).—We prefer using no manure for Carrots or Parsnips, unless it be dug deep into the ground. To all sorts except the early Horn Carrot, surface manuring has a tendency to make the roots fork. We had a faded appearance to a slight extent, such as that you mention, a year or two ago. We dusted the plants with soot and lime during a dewy morning; washed them with a garden engine next day, and, for a day or two afterwards, whisked the rows with a brick-broom, and saw no more of the pest. We can hold out no preventive, except deep-stirred ground, and precautions in time.

FRUIT OF THE CACTUS (A Reader).—Some people are very fond of the fruit of the Cactus, and others will not touch them because it is not common to do so. The fruit has a peculiar sweetish, sub-acid flavour. We have seen dishes on table of the fruit of *Cactus speciosa*, *speciosissima*, &c.; but, except in a few cases, they were untouched. Except for the hard outside shell of *Passiflora edulis*, the flavour of that and the Cactus is something alike, both too luscious for any one to eat much of. The little fruit of the Cape Gooseberry may also be put in the same category. At one time it was much praised to us, and we were desired to grow some of it; but we do not believe half a dozen of the fruit were ever used at table. The Cactus fruit becomes of a purplish colour and soft when fit to eat. To grow plants from seed, wash the fruit so as to separate the seeds from the pulp, dry the latter on a sheet of paper, then sow in a pot of light sandy soil, covering the seeds slightly, and put the pot in a hotbed if there is one handy. If not, place a square of glass across the pot and keep it near the fireplace until the seedlings appear, and then place inside of the window, raising the square of glass a little in sunny days.

VARIOUS (Rector).—The index of three or four volumes of this work would give you a clue to all that is useful to know of *Cyanotis vittata*. It is grown for its leaves only, and best in a hanging-basket. It will grow and root in anything, or kind of soil, that ever was used in pots, and it is a stove plant by nature, but a real drawing-room plant the whole summer, and the best way is to renew it every spring. We have seen nine or ten pots of it doing very comfortably out in the compost yard; there they will be till flowers get scarce in the autumn, when the *Cyanotis* plants will take the place of cut flowers and keep it till they are done for towards the end of January. The ladies give them too much water and too little heat, and they die at the roots a long time before they are past use, and then the tops do for cuttings. It is used strictly as an annual. Fortune's Rose is like all the far east Roses. They require abundance of room and exemption from the knife for the first ten or twelve years, then, if the soil is what they like, they will pay for their keep. *Spironema fragrans* is all but a *Clerodendron*; not a very desirable plant according to our very short acquaintance with it.

CUCUMBER FOR EXHIBITION (A Constant Subscriber).—Either the Manchester Improved or Carter's Champion. Any respectable London seedmen can supply the seed.

NAMES OF GRASSES (W. S.).—1, *Cynosurus cristatus*; 2, *Anthoxanthum odoratum*; 3 and 5, *Agrostis vulgaris*; 4, *Avena flavescens*; 6, *Dactylis glomerata*.

NAME OF PLANT (H. Taylor).—It is not *Elymus geniculatus*, but *Triticum junceum*, or Sea Rushy Wheat Grass.

FLOWER SHOWS FOR 1861.

JULY 18th. TOWCESTER FLORAL AND HORTICULTURAL SOCIETY. Sec., T. B. Rodhouse, Towcester.

JULY 18th. PRESCOT. Sec., J. Beesley.

AUGUST 9th. BELFAST ROYAL BOTANIC AND HORTICULTURAL SOCIETY. (Plants, Fruits, and Vegetables.) Sec., George A. Carruthers.

AUGUST 14th. PORTSEA ISLAND. Sec., H. Hollingsworth, Southsea.

AUGUST 28th. DREWSBURY. Sec., Mr. Edward Forth.

SEPTEMBER 2nd. HYCKMONDWIKE. (Floral, Horticultural, and Agricultural.) Sec., G. Kelley, Hyckmondwike.

SEPTEMBER 4th and 5th. CRYSTAL PALACE. (Dahlias, Cut Flowers of other descriptions, and Fruit.) Sec., W. Houghton.

SEPTEMBER 11th. ROYAL HORTICULTURAL SOCIETY. (Dahlias and other Cut Flowers.) Garden Superintendent, G. Eyles.

SEPTEMBER 18th and 19th. BRIGHTON AND SUSSEX. Sec., E. CARPENTER.

SEPTEMBER 6th and 7th. ROYAL HORTICULTURAL SOCIETY. (Fruit and Chrysanthemums.) Garden Superintendent, G. Eyles.

NOVEMBER 12th and 13th. STONE NEWINGTON CHRYSANTHEMUM SOCIETY. Sec., W. T. Howe.

NOVEMBER 14th and 15th. CRYSTAL PALACE. (Chrysanthemum Show.) Sec., W. Houghton.

N.B.—Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

NOTHING will benefit chickens (as well as all other fowls, as well as those that still require manual care) more than to be put out or driven out, as the case may be, on a fine day, when the sun is shining, and the air is fresh.

also affords an excellent place for hens with chickens. It is fresh and wholesome for them; and the change from the comparative confinement they have suffered while the grass has been laid up for mowing, to the range they will now enjoy, cannot be otherwise than beneficial.

As chickens are growing into adults, and as there are few greater plagues in a yard than a superabundance of cocks, we venture to suggest to our readers the necessity of acting now. Fowls still sell well in markets, and this is the season when poultry is acceptable at every table. The young cocks are now tender and juicy although large. If not killed they must be soon shut up, and then they will leave off growing. There is always a disinclination to kill, and it would be easily understood if there were any way of selling them alive; but at their age and at this season there is not. The belief they are too good to kill is a mischievous one; and many a one in March has regretted, when tugging at the sinewy leg of a cock of the previous April or May, that they had not followed our oft-repeated advice, and eaten them while they were tender.

"But such fowls," says our friend, "are too good for the table." "What will you do with them?" ask we. "That is what you must tell us," is the answer.

We frankly tell you we cannot. There is not a sale for all the cocks alive that are bred, not even if they were all food. No one cares to be overdone with that sex—they are bad stock. Of necessity some of our exhortations at this time of year must be dry; they are almost statistical. Keep as many pullets as you will, their eggs will pay for their food; but give us your attention for a moment while we try to back up our advice about the cocks. Your old stock is perfect, and they are now going into moult with every prospect of coming well out of it. Your young stock amounts to ninety-one pullets and thirty-three cocks. As we said before, you declare the latter are all too good to kill—that is, you think they ought to make more than killing price; and if they do that, why the purchasers may use them as they please.

You wish to sell twenty-four cocks for stock purposes, at not less than 12s. each, producing £14 8s. We advise you to sell them at 4s. each, producing £4 16s. Figures would tell against us if you could sell, but you cannot. You will try. Let us anticipate the result.

The older these young cocks get, the more troublesome they will be. They ought to be shut up; but where are they to be put? They are no longer afraid of the old bird, and will certainly do him an injury, especially the forwardest bird. He must be shut up. The only spare pen is devoted to him, and it is soon tenanted by six or seven others which have the same pugnacity of disposition towards their parent. For a time they agree among themselves, but there is a day when all begin fighting, and then what a spectacle of miserable creatures. But, admit that they agree, still in February some must be sold. It is always difficult to find a sale for twenty-four cocks; but, admit that four sell for 12s. each, and four for 10s., the rest are unsaleable except at a very low price. They make 2s. 6d. each. Now, these birds have been kept from August 1st to February 1st, twenty-four weeks. Each bird has consumed per week 1½d., making a total of 3s. They have realised according to our estimate, £6 8s. Deduct therefrom £3 12s. for keep, and it leaves £2 16s. against £4 16s. if sold now. It is in favour of our argument that there is *always* a sale for young poultry for the table, and such are these surplus cocks now. The small price at which we imagine the larger number of cocks has been sold, is explained by the fact that they were become nuisances in the yard, and were too old for the table—they could only be sold at a sacrifice. There is no torment equal to too many cocks. Bright, fresh, handsome birds are shut up till they become poor and diseased; the favourites are allowed to run about till they fight with and spoil each other; and that which should have been a pleasure becomes a bore. In poultry, as in everything else, things are never so well managed or taken care of as when there is *only just enough* of them.

SPANISH COCK BROODING—HEN LAYING WITH DIFFICULTY.

In your last week's Number I see a correspondent records the case of a Spanish cock undertaking the care of a brood of chickens. Two seasons since I had two broods of Spanish chickens, and put them with one hen. The cock undertook

part of her duties—in fact, of the two, was most attentive to them, scratching about for food, and calling them, and nestling them under his wings; and it was at times ludicrous to observe his anxious efforts to effectually cover more than he was able. Ultimately I removed the hen and left him the entire charge.

Some few weeks since I purchased a Spanish hen, and have not yet had an egg from her; she frequently makes the noise peculiar to hens when wanting to lay, and visits and sits regularly in the nest-box—where there are eggs—for about a quarter of an hour, but has never laid an egg yet; she appears quite well, and to the eye nothing seems amiss with her. You will oblige by noticing what you think the best plan to adopt with her.—F. R. PRIDEAUX.

[The hen is, probably, too fat. Dip a quill feather in olive oil and introduce it an inch, or rather more, into the vent. This will, probably, enable her to lay at once; and to provide against such difficulty for the future give her a dessert-spoonful of castor oil, repeating the dose after the lapse of a day, and feed her less liberally.]

BEES AND THOSE WHO HAVE WRITTEN ABOUT THEM.

(Continued from Vol. XXIV., page 63.)

CHARLES BUTLER.

WE have now to trace out the scanty records remaining of a man rarely remembered, but who was one of the best scholars, one of the most original thinkers, and one of the most neglected during that period of mental, religious, and political strife—our Stuart era.

"Charles Butler," says Anthony Wood, "was born at one of the Wycombs (Great Wycomb, I suppose) in Bucks, entered a student into Magdalen Hall in the year 1579, took a degree in Arts, and being made one of the Bible Clerks of Magdalen College was translated thereunto. Soon after, proceeding in that Faculty, he became master of the free school at Basingstoke in Hampshire; where continuing 7 years with the enjoyment of a cure of a little church called *Skewres*, was promoted to the vicaridge of *Lawrence-Wotton*, three miles distant thence (a poor preferment, God wot, for such a worthy scholar, where being settled, he wrote and published books which show him to have been an ingenious man, and well skilled in various sorts of learning."—(*Athena Oxoniensis*).

We have searched the records of parishes in and about Basingstoke, but with small success. The Vicar of Wootton, the Rev. W. B. Wither, in a note obligingly communicated to us, says—"In an old book in the parish chest I have discovered that Charles Butler was vicar here from 1601 to 1650, but can find no record of his death, though I can of some of his children. One was probably the churchwarden. In the catalogue of books left to the Vicar of Wootton by Thos. Fenton I find this:—'*Syngeneia*, sive de propinquitatē Matrimonium impediēte regula generalis; per C. Butler, e coll: Magd: Oxon et Vicar de Wotton, Hants. 4to.—Oxon—1625.' But I have never seen the work." This work was reprinted at Frankfort in 1643, in octavo, combined with Fr. Florens "De nuptiis Consobrinarum prohibitio aut permissio."

He had previously published a work on Rhetoric, entitled, "*Rhetoricæ libri duo, quorum prior de tropis et figuris, posterior de voce et gestu præcepit.*" This he was induced to publish, because a work on the subject had been circulated under his name, but which he repudiated. His volume was published at Oxford, probably in 1601, the preface being dated "Basingstoke, 5 Ides of March 1600." It is dedicated to Sir T. Egerton, Keeper of the Great Seal. The 4th edition appeared in 1618, another was printed at London in 1635, and one at Leyden in 1642.

He also was the author of "*Oratoris libri duo*," of which one edition is dated 1633, and another 1635.

His "*English Grammar*" was published in 1633, in which he proposed the introduction of some new letters, and the rejection of those superfluous in our spelling, which, he truthfully urged, should be more phonetic. Dr. Johnson, in the Grammar prefixed to the folio edition of his Dictionary, gives an account of Butler's Grammar, with a specimen of his orthography, and observes that he "was a man who did not want an understanding."

In 1636 appeared his "*Principles of Music*," of which Dr. Burney says it was the only theoretical or didactic work on

music published during the reign of Charles the 1st, and that it contains more knowledge in a small compass than any other of the kind in our language. But, adds Dr. Burney, the Saxon and new characters he uses, in order to explode such letters as are redundant or of uncertain powers, render this musical tract somewhat difficult to peruse.

"He took," says Anthony Wood, "his last farewell of this world on the 29th of March in sixteen hundred forty and seven, and in that of his age 88, or thereabouts (after he had been vicar of *Wotton St. Lawrence* before mentioned 43 years), and was buried in the chancel of the church there."—(*Athena Oxoniensis*.) Neither in that chancel nor elsewhere, that we can discover, does any sepulchral monument remain.

"It may be interesting to know," says Mr. Wither in the letter from which we have quoted, "that two of the glebe fields here bear these significant names, 'Waxhanger' and 'Honey-Field.' Did Mr. Butler give them these names?" We wish we had the information which would enable us to respond to these queries.

We have left for our conclusion the volume which entitled its author to a notice in our columns—namely,

"*The Feminine Monarchie, or the Historie of Bees*. Showing their admirable nature and properties; their generation and colonies; their government, loyalty, art, industri, enemis, wars, magnanimiti, &c. Together with the right ordering of them from time to time, and the sweet arising thereof. Written out of experience by Charles Butler, Magd." The first edition was printed at Oxford in 1609, and we have seen other editions dated respectively 1622 and 1634. Anthony Wood observes that "it was translated into *Latin* [we have seen an edition dated 1673] by *Rich. Richardson*, sometime of *Emanuel Coll: in Cambridge*, now, or lately, an inhabitant in the most pleasant village of *Brizworth* in *Northamptonshire*. Lond. 1673. Oct. In this Version he hath left out some of the ornamental and emblematical part of the *English* copy, and hath, with the Author's, scattered and intermixed his own observations on Bees, and what of note he had either heard from men skilful in this way, or had read in other books. But this last translation being slow in the sale, there hath been a new title put to it, and said therein to be printed at *Oxon*, 1682."—(*Athena Oxoniensis*.)

With the exception of one by Edmund Southerne, which we will epitomise hereafter, this is the first original work upon bees and their management with which we are acquainted, for we are not possessed of a copy of that to which Butler refers in his preface. It was written, he says, by George Pictor, a physician, the best of writers, and translated word for word into English, by "T. H., of London." If this translation is Thomas Hill's book on bees, then, certainly, it will not endure comparison with Butler's "*Feminine Monarchy*."

The 1st chapter on the nature and properties of bees and their queen, contains the first announcement which we have met with that the monarch of the hive is of the female sex. Aristotle, he observes, and as many as followed him, called the bees' governor Basileus or Rex, but "the males here bear no sway at all, this being an Amazonian or feminine kingdom." He describes the queen very fully and accurately.

In chapter 2 he gives particulars of the apiary, or "Bee Garden and seats of Hives."

Chapter 3 is on "Hives and dressing them." "The best straw hives that I have seen are wrought by Thomas May, of Sunning, about one mile from Reading, and by William Harper, of Cudsden, about four miles from Oxford." He considered that hives should hold "between five and seven gallons." They were of the old cupola form.

Chapter 4, "Breeding of Bees and of the Drones" shows his knowledge was as correct here as it was relative to the queen. He states that the drones are males, but he thought, as do some apiarians even now, that the working bees breed.

Chapter 5, "Swarming and Hiving," gives good practical directions, but the fact of the queen "piping," or uttering a peculiar shrill note premonitory of the departure of a colony, led the musical author of the volume to compose "*A Melissomelos, or Bees' Madrigal*." This, with the musical notes, occupies four pages, and in it, the author affirms, "Musicians may see the grounds of their art."

The 6th Chapter descants on the bees' "Work;" the 7th on "Their Enemies;" the 8th on "Feeding;" the 9th on "Removing Bees;" and the 10th on "Their fruit and profit."

The preface of the edition before us is dated at Wotton, May 11th, 1623, and in it he expresses the prophetic conviction that his book, after a while, like his work on Tropes and Figures,

would become well and favourably known. This was no utterance of vanity, but the justified utterance of a man knowing that he was imparting truth, and that truth ultimately prevails.

The work is appropriately dedicated to the Queen of the reigning Monarch, James the 1st, in an address purporting to be from the Queen of Bees, "the most ancient and invincible monarch of the earth."

REMOVING BEES FROM AN OLD HIVE.

In February last I came into possession of a stock of bees in a very old hive. They seemed weak till the latter end of May, so we fed them till near that time; since then, and for the last fortnight or more, they have seemed very strong both in bees and also in honey, but there seems no signs of swarming; and the hive is such an old rotten affair that I think it cannot last another winter. If they had swarmed I intended to have put the swarm in an improved cottage-hive, and also the cast in like manner, joining the whole stock in September to the cast; but know not what to do as they do not swarm. I have another hive full of combs of last year, in which the bees died in the winter. Could they be transferred to that by any means with any chance of success?—H. NIXON.

[Drive your bees at once into the improved hive, and put it in the old stock's place, which latter should be shifted a couple of feet either to the right or left. Repeat the process in three weeks' time with the old hive, and add the bees to the newly-formed community. By this means you will, probably, secure a good quantity of honey free from brood in the old hive, and a strong colony in the new one. See also that they do not want food during winter.]

SKY BEES.

ABOUT two years back, in some fields on the cliffs near Teignmouth, walking with the owner of the property, we heard the sound as of a large swarm of bees. We looked through each fence and examined all the trees, the sound appearing, wherever we were, at about an equal distance from us. Could see nothing of the kind. On application to a countryman who was thrashing in a barn near, he stated that it was "sky bees," or bees which were so high up as to be invisible, but yet might be heard; that they were only heard when dry weather might be expected. The weather on this day was remarkably clear, and anything of the kind could have been seen at as long a distance as the sound would reach. Can you explain? My friend the owner has heard them twice since, once about a month back, the weather then remarkably clear.—G. C.

[We cannot positively explain the phenomenon described by our correspondent. The sound may be produced by wind in the fissures of the cliffs; or it is by no means impossible that an errant swarm may have taken up its abode in some rocky cavity, in the same manner as is usual in warm climates, where an enormous number of bee colonies are said to flourish in the caverns among the rocks; but we rather incline to the opinion that the sound is produced by the passage of the wind over the dry stems of the grasses, and other herbage on the cliffs; those stems emitting sounds like the strings of an Æolian harp. A similar sound, as if emitted by innumerable bees, is heard in hot, dry weather on the downs near Winchester, but no bees are there; but there are millions of the wiry stems of the crested dog's-tail grass, among which the breezes are passing, and to which we have always attributed the sound.]

THE AYRSHIRE BEE MANAGEMENT.

As an amateur in bee-keeping, I have had my attention called to a series of papers in your Journal by "A RENFREWSHIRE BEE-KEEPER," in which he eulogises the management of the Ayrshire fraternity as to the construction of their apiaries and their appurtenances. I therefore felt happy in a business call, which led me, a few days ago, across the country to Cunningham, the northern district of Ayrshire, while I anticipated a singular demonstration of the facts so graphically described by your Renfrew correspondent. I was fortunate in an introduction to Mr. Brown and Mr. Ferguson, of Stewarton, by whom I was favoured with such an exhibition of care, skill and taste, as fully warranted me in endorsing the encomiums of our Renfrewshire correspondent.

In crossing the country I did not observe an inferiority of pasture in any locality compared with that of the district of Kilmarnock, Kilmaurs, and Stewarton: I am, therefore, led to the conclusion that the excellence of the supers exhibited in the shop windows of Glasgow, as to purity of colour, absence of brood, and straightness of comb, will at least stand a favourable comparison with any produced in the United Kingdom, and must be attributed to skilful management on the part of the keepers in the above district.

Being only in my novitiate I could not fully appreciate the amount of experimental knowledge of the gentlemen referred to above; but I could understand the scientific ventilation of the hives for the sake of temperature so requisite for purity of combs and honey. I could also admire the tidy filtration of broken comb through coarser and finer woollen scarves, dripping honey very unlike what I have often bought, and which, on standing a few days, produced a consistent sediment in the bottom of the vessel, while on the top floated an oily dark liquid, not unlike kitchen slops.

I would recommend a jaunt to the Land of Burns on the part of the Editor of "The Bee-keeper's Manual;" and an afternoon spent with the Stewarton bee-keepers will afford him a large amount of information, which, if it does not serve as a corrective to his former editions, will, at least, prove a subsidiary that will warrant the sixth edition being stereotyped as a standard work on the economy of bees. I guarantee him a generous and courteous welcome from the Stewarton folks.—WILMOR.

VARIETIES.

PLANTS CULTIVATED IN ICELAND.—In a few gardens Potatoes, Cabbages, and a few pot herbs are managed to be grown in small quantities, but grain will not ripen in their transient and uncertain summer, and must all be brought from the European continent. Even their grass crop is often destroyed by the Polar ice, which in some years embelts the island, occasioning such incessant rain that it is impossible to dry the hay. When this happens famine follows, for on their cows and ewes they principally depend for their sustenance during the long Arctic winter. Dried cod's heads are their only reserve; the bodies of the fish they are obliged to barter for European commodities—broad amongst the number, of which the masses, and only in the parts adjacent to the trading stations, are able to afford more than one meal a-week. The only approach to a corn crop cultivated by the Icelanders, and that only in favoured localities, is what they call Melur, which is *Elymus arenarius*. Its seeds are highly appreciated, and, besides being eaten raw, are made into porridge and thin cakes not unlike a bannock. It is much cultivated at the foot of Mount Kekla, and certainly seemed like matter out of place, springing as it did from the white volcanic sand, on all sides surrounded by lavas and ashes, devoid of the faintest traces of vegetation. Curious to know how it got there, and observing that it always grew on the summit of little sand cones, I asked my friend the farmer. He said it was planted there on account of the warmth and shelter. This species of grass has the appearance of Rye, for which some travellers have mistaken it. The peasants gather it in August, but being seldom ripe it requires to be dried before it can be used.—(Forbes' Iceland.)

OUR LETTER BOX.

EAR-LOBES OF BLACK-BREASTED GAME (*A Beginner*).—They ought to be red.

DEATH OF A MURCOVY DUCK (*A. B. D.*).—The duck was so decomposed we could arrive at no judgment about it. The little we could observe gave no clue to the cause of death. Paralysis in ducks is sometimes caused by the water they frequent. We advise you to keep them altogether out of the water, shut them in a pig-stye, and supply them with a milk-pail full of water. Keep them in confinement till they are thoroughly strong.

LONDON MARKETS.—JULY 15.

POULTRY.

There is still but a moderate supply of poultry, if we except small chickens. Of these latter there are too many. Such is always the case at this season of the year.

	Each—s. d.	s. d.		Each—s. d.	s. d.
Large Fowls.....	4	6 to 5	Guinea Fowls.....	8	6 to 0
Smaller Fowls.....	3	0 " 3	Leverets.....	0	" 0
Chickens.....	2	0 " 2	Pigeons.....	0	" 0
Ducklings.....	2	" 3	Rabbits.....	1	4 " 0

WEEKLY CALENDAR.

Day of M'nth.	Day of Week.	JULY 23—29, 1861.	WEATHER NEAR LONDON IN 1860.							Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets.			
23	Tu	Malva.	29.801—29.603	deg. deg.	S.W.	.56	12 4	59 7	28 8	15	6 9	204
24	W	Prinos.	29.854—29.525	62—42	N.W.	.01	14 4	58 8	45 8	16	6 11	205
25	Th	St. JAMES. DUCHESS CAMBRIDGE.	29.963—29.914	65—34	N.W.	—	15 4	57 8	1 9	17	6 11	206
26	F	Cytisus. [BORN, 1797.	29.969—29.818	66—42	N.W.	—	17 4	56 8	16 9	18	6 12	207
27	S	Gleditschia.	29.831—29.673	71—49	W.	—	18 4	54 8	30 9	19	6 11	208
28	SUN	9 SUNDAY AFTER TRINITY.	29.721—29.694	74—43	W.	1.39	20 4	53 8	47 9	20	6 10	209
29	M	Cistus.	29.980—29.789	75—51	N.	—	21 4	51 8	8 10	(6 9	210

METEOROLOGY OF THE WEEK.—At Chislewick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 74.7° and 51.9° respectively. The greatest heat, 92°, occurred on the 25th in 1844; and the lowest cold, 33°, on the 29th in 1858. During the period 132 days were fine, and on 99 rain fell.

FERTILISATION OF WHEAT.



ANOTHER cross-breeder says that both of us, the Herefordshire Rector, and the writer, are right about the Wheat question, and also both wrong, but declines giving or allowing his name to be given: therefore the question stands yet on the last issue. What I undertook to prove is, that the pollen is discharged in the bottom of the husk before the stamen lengthens; and what the worthy Rector affirms is, that the stamen pushes up the anther, and the anther does not discharge the pollen till the farmer can see it outside the husk, if he looks for it. The man without the spirit of his mother says the Rector is wrong in supposing the pollen is not shed till the anthers are seen outside the husks, and that I am wrong in putting the time too early; but in my challenge I gave up that point for this reason, that some varieties of Wheat might be like varieties of many other plants I cross or look into for the sake of crossing—that is, flower much earlier or much later than others—a point of little practical use. He says out of eleven kinds of Wheat with which he is acquainted, only one comes so early as I (first) stated, and that in three kinds the ears are 6 inches out of the sheath before the pollen is ripe. And there is a second party who saw and understood my "dissections," a lady, but she will not consent to have a say in it: therefore, if it is agreeable to the Rector, I should like to decide the question another way—that is, get a dozen or fifteen kinds of the best marked Wheat by next October, and two or three of the best spring Wheat, including the Talavera, to be sown next March, the lot to be grown in the rectory garden of Surbiton, for I can calculate on getting a little space there for a point of great interest. The examinations and the result to be entrusted to any one, and to be recorded in this Journal.

MORPHOLOGY.

"It never rains but it pours," however, and this harvest question was not ripe for the sickle when Mr. Darwin touched the quick to the marrow, in his inquiry after the fashions of the centrifugal flowers in a head or truss. There is a greater harvest to be reaped out of that question than any one of us is yet aware of, or even dreamed about. And the last feather is said to break the back of the beast. "NICKERBOX" laid on that feather last week, page 305; and I must say more than ever I intended to say, or else allow my back to snap with the last feather. Well, I have seen two things since Mr. Darwin put the question about the central flower, and one of them has made a revolution in my own ideas on a branch of my daily work—a branch in crossing. And I shall make a clean breast of it to save the back. I saw two flowers growing in one head, and they repre-

sented two good botanical genera. The origin of two genera were in that head. The central flower represented the Geraniums of Europe, and the rest of the flowers were of true Pelargoniums; the first with regular and the second with irregular flowers (begging pardon of the florists). The flower was the produce of his majesty the king of cross-breeders, and Mr. Darwin may have seen it before this. The other flower was in my own garden, and it also represented two different botanical genera, if not three. It was a deep variety of the dark-leaved Shamrock Clover which I had from Mr. Salter last year. The flowers are those of the white Clover, a Pea flower; but the axis of every head on my plants was disturbed by some strong stimulus. The effect was various, the axis or central flower rose up into a stalk carrying flowers in three different ways, and in one instance the flowers of two genera. One kind had three whorls of the usual flowers, one above the other; one had the flowers panicle fashion; one had the top whorl of four flowers included within one common calyx; and one had the extremity changed into regular flowers.

In order not to be laughed at for such vagaries, I showed the panicle and common calyx sport to Mr. Moore, Secretary to the Floricultural Committee, and I sent the one with the regular flowers to Mr. Wrexwell J. Masters, a good botanist, who is now studying that branch of the science, and would be glad to receive specimens of morphology from any one. His address is Rye Lane, Peckham, S.W. Just send him any out-of-the-way thing you may see among flowers. What he said of that Clover will not rise in judgment against me. "It is of particular interest, inasmuch as the uppermost central flower is quite regular, not papilionaceous at all."

Now, you take these two instances of this last month of June, and consider them with the two instances now before you, of two cross-breeders having been able to determine that two races of plants can be had from one head of bloom by the pollen of one father, and see what you can bring it to. Mr. Standish had not the faintest idea that I was aware of the vagaries of the same pollen, when he had founded one branch of his own practice on the knowledge of the fact; and what induced me to commit the secret to Dr. Hogg, three years since, was the belief that I should only be laughed at in those days for stating such a simple truth, as it was new—for this world is so prone to the marvellous, that a new idea or a new fact has no relish with it unless it is involved in some most tremendous complexity, and lest I should die before men's ideas were ripe for receiving the thing simply on its own merits. Mr. Standish some years since published the foundation of his discovery in the Journal of the Horticultural Society, without giving the smallest idea of the fact of the pollen part of the process with Rhododendrons. Without much practical knowledge in the crossing of that race, I could then, and much more now, back up every word he said from my own practice in Pelargoniums. I forget the very words, but his meaning was, that you could run the race by crossing till the seedlings could not stand on their legs

and could not be reared. I can do the same thing by the same process with Surprise and Shrubland Scarlet Geraniums, the two strongest kinds now in the race. Well, the two are most extensive families, and they branch off much in the same well-marked features as Rhodora and Azalea in the Rhododendron genus; and as *Erodium*, *Hoarea*, *Campylia*, and the other like sections of *Pelargonium*. But a great difference meets you on the threshold between these two extensive families when you come to cross them. All the sections, or the genera of old authors, of the *Rhododendron* cross freely enough; but no one section of the *Pelargonium* will do so with any other section except, perhaps, a few of the little tuberous-rooted *Hoareas*, and yet with that great difference the same principle is common to each of them, for the branching out of new races with distinctive habits. Then the question is, Are these two families alone of all the family of plants endowed with this principle? Surely not: the principle in some way or other must pervade the whole vegetable kingdom, and practice will have to discover this principle and its application in a great number of genera before much good can be done with it by speculating theorists, or scientific deductions.

VARIATION OF PLANTS.

But the sharp end of the wedge is in, and we must drive it home before we shall be masters of the mystery of the variegation of plants. Very few indeed can now be convinced by special arguments. I believe, and I have my own long practice to back me, that disease has no more to do with variegation in plants than I have to do with the people of St. Ives. But I believe also that we all know what it is, and that we only differ in the meaning of the expression "disease." If I went a-shooting, broke my leg, and the limb mortified, did I or could I die by disease? I am, perhaps, the healthiest of all gardeners, yet might have died of a disease according to one-half the world—and there is just the root of the question for want of better terms to express it. Every condition of every plant, barring accidents, must be traced to an equivalent in the blood, or the sap as we say. Plants receive all kinds of variegation through their sap. Every gardener knows a diseased plant when he sees it, but no gardener has ever yet seen one diseased plant turn variegated. I happen to know the person who signed his name "AN OLD SHOWMAN," and also the very subject on which he worked; and if I did not know from my own experience the origin and the cause of his plants turning variegated, I confess I should be on the same journey with him. He is a man of great practice with an original turn of mind, and the last man on the turf whom one could call a fast man—in short, the very kind of person to convince one even against his will; but the evidence of the senses is the same as the bare fact, and the fact is, that variegation like the origin of races begins first with the pollen. All the variegation in the hand of "AN OLD SHOWMAN," had that origin, and his manipulation of the plants goes no further than to manifest the fact before its time. I have at this moment the very reverse of his process revealing the very same facts which he stated, and he can see it if he should happen to come to this part of the country. And if he comes to London, I invite him down to see more than one hundred *Pelargoniums* which I brought under his process on purpose to the verge of life. I caused nine-ninths of their substance to become putrid, and exhorting the tenth part to live and show me how he got his variegation; but as I was quite sure from the beginning, not a single leaf did I turn from its usual way and colour. And if he can get one of my one hundred plants to turn variegated in one, two, or three years, by a second and a third repetition of the same process, I shall give him a scotch gallon of whiskey for his Christmas, for he, too, is accursed of the legions of Montrose.

My belief is that the variegation of a plant—of all

roots to get it, or what caused it, from the earth, or in some one of the leaves which appeared immediately after the seed-leaf, and while the tiny thing was yet dependant for the chief part of its nourishment on the natural office of the seed-leaf; the seed-leaves in the vegetable kingdom being equivalent to the mamma or teats in the animal kingdom. When the leaves of seedlings are once able to act on the roots the seedling is fit to be weaned. You can do away with the seed-leaves with little or no injury, and once a seedling is weaned no art of man or woman will ever get it to turn a single variegated leaf to the end of time; and if a seedling has had a variegated seed-leaf, or another leaf that showed variation before it had been weaned, and that plant has had two years' growth over the space occupied by the variegated leaf or leaves, no art of man is, or will be able ever to divest that plant of the principle, if I may call it so, of variegation; and after the lapse of a year, or of a generation, that principle will break out when the plant is under some certain conditions. That is what you have to discover—the conditions under which variegation, in a certain family, will surely appear if it is inherent in any one of its members from the seedling state. But that condition may not suffice for a member of the family nearest in alliance, or it may for many families: that part is the mystery.

Mr. Standish can cross any *Rhododendron*, including the great Nepal tree *Rhododendrons*, down or up to the verge of variegation, and until there is not a particle of colour in the leaves, and no art of man can grow the seedlings, yet every one of them is in perfect health according to its own degree of existence. The tiny midge is as healthy as the antelope. The seedling which no one can grow is just as healthy as the midge, or as the antelope, according to its own rank in life.

INFLUENCE OF THE POLLEN IN THE SAME FLOWER.

Variegation is a consequence of some condition of the pollen, be it foreign or natural; and the new discovery about the origin of races is the surest witness we have, that to enable plants to continue true and healthy, strong and lasting in their generations, Nature has invested the pollen with the power of keeping up the stock. The strongest and the healthiest plant of a kind is able to take the lead on the stigma over ten other plants that are less likely to do credit to the family name. I have asserted that long enough, and here is the proof out of Baron Hugel seed-pods. I can bring you a plant, a seedling, that will be twice as strong as the Baron, and out of the same truss another seedling that will not be so strong as he, nor like him in appearance; and in another cross, or in a third one, according to the strength of my chief ancestor, I shall show you a plant which, probably, you would not acknowledge to belong to the same section as the Baron, and all from the pollen of one flower.

In the great bulk of the Scarlet or Horseshoe Geraniums there are but seven stamens, four long ones; one of medium length, but which is often wanting, and two almost sessile like the anthers of Wheat—that is, very short indeed, and opening at the bottom face to face. These two are they which reduce a whole family to beggary; first to dwarfs or Tom Thumbs, or better still, to minimums, or the smallest of that kind consistent with vigour sufficient to become a useful plant in cultivation, and, lastly, to the brink of ruin, and drive that race out of existence altogether, if there were not other means provided to arrest the decline, or keep it from manifesting itself at all in a state of Nature.

Now, it is wonderful how simple things are when once we know them; but it is more wonderfully simple how I find out that mystery. You recollect how I said my seeds were sown and labelled; it was by taking every pod or beak from the truss of a Geranium just before the seeds were quite ripe, and planting the pods round the sides of pots, like one row of cuttings. If the pod was full there would be three seedlings to every beak of them

as they appeared. My number for Baron Hugel is fifteen, and all seeds of the Baron have that number on the face of the tally, and the number of the pollen kind is cut on the edge of the same tally. Now, as my experimental seeds could never get mixed by this method, and, as often happened, the tally with fifteen on the face, and eighteen (Stella) on the edge, showed whole bunches of very stout seedlings, and other bunches with very delicate ones, as appeared to me. There is nothing in these things without a cause, if we did but know it; and I puzzled my brains for two or three years before I discovered the real cause, and I made some of the most foolish experiments you ever heard of in the trials; but as my system of tallying cross seedlings cannot err, and knowing Nature never does in these things, I must and at last did find out the thing, and I hope it will be useful to you. To me it is of more value, as confirming the possibility of the strongest pollen taking the lead on the stigma.

D. BEATON.

ARRANGING FLOWERS IN BOUQUETS AND VASES.

(Continued from page 300.)

COLOURS.

IN one of my papers I remarked, that many people when they are going to make up a bouquet will take a great amount of pains and trouble to procure about fifty sprays for it of all kinds of charming little flowers—new kinds of Geraniums and grand new Fuchsias, sprays of Heath and Epacris, and many beautiful flowers besides; and then when the bouquet is finished, and has cost no small amount either of money or time, it somehow or other is not half so striking as we hoped it would be—a great many flowers, very pretty flowers, but “rather crowded somehow,” and not exactly a match, such as flowers should be, with the dress that they are associated with.

Now, I have always been told that in both wreaths and bouquets there should be some one distinct, bright colour, and one generally white, in distinct contrast with it. Sometimes a third colour comes in, too, most charmingly; but this may be or not, and, in fact, the green foundation is in all cases there.

The first great rule then, is, I believe, whatever colour you do adopt, to be most strict in the exclusion of all but the one precise shade you choose. Supposing scarlet and white are to be the colours, having chosen one good scarlet, not the slightest variation can possibly be allowed, not a single flower that does not match the rest, not even a vestige of crimson, and not a shade of pink. In a regularly-arranged shape, at any rate, it would be most destructive, and in any shape each flower put in not of the two ruling shades rather detracts from than adds to the brilliancy of the whole. You can try this by putting two or three purple flowers into a vase of red and white. You will be surprised to find how many more are wanted at once to “fill it.”

For a scarlet and white bouquet this is how I should proceed. Having procured a stiff, bushy piece of small-leaved Myrtle, or, failing that, of the common Box or Privet, I should fasten an end of strong white worsted firmly to the stem, tying in any small stray shoots and making it fairly firm together. In very many cases—if, for instance, the centre flower is a Rose or a Geranium—it is well to dip the foundation in water and then just shake it free from superfluous drops; and besides this precaution the flowers should always be gathered early before the mid-day sun has shone upon them, for if then put in water in a cool, dark cupboard, or under a dish-cover in a cool place, they will last much longer than if quite fresh gathered.

Taking a white Rose, or, perhaps, a branch of Azalea,

or a white Geranium, or a white Chrysanthemum, for the centre flower, I should roll a very narrow strip of thin leather, or of oilskin, or of something else waterproof, neatly round the stem, just turning up the end at last. For Azaleas a touch of gum water or dissolved isinglass put underneath the flower where it joins its outer cup, or calyx, is a great preservative; and for Geraniums I am told a drop let fall into the flower preserves them beautifully.

I consider Roses the worst centre flowers, in a general way, for they are so very apt to shed their petals, and I do not know any means of preserving them by gum. But three or four little bunches of common white Lilac broken from the large bunch and fastened together rather flatly with a short length of fine cap wire (green flower wire is the very best) make a charming dead mass of white, and this flower is so easily forced, too, in the winter season. Next to this I think some drooping white flowers the prettiest of all. White Heath or Deutzia in the early summer season, only about three sprays, and a few little bits of any light lively green. These (flowers and green) having been wound on carefully with the long end of worsted, the next proceeding would be to add a row of pink, or blue, or lilac, or scarlet, or cerise, or whatever the colour is to be, either interspersed with white, when the edges are wished to be broken, or as a geometrical line, which should be most exactly distinct and even.

The Poinsettia is a most beautiful hothouse plant for winter bouquets, and the Begonia fuchsoides almost more so, with its coral drops. Still, when the right idea of colour is once secured, very many pretty effective substitutes may be found. Scarlet berries even, in little tiny groups, common Scarlet Geraniums, or the cerise kinds, while scarlet single Anemones and dwarf red Van Thol single Tulips are about the last flowers one would expect to find useful for such a purpose, and are yet amongst the most brilliant possible, and also the most lasting of all our flowers.

But here I ought to caution any young lady who tries these styles, that she ought just to pass a needle and thread through any berries that she wears, or make them really secure with gum or melted isinglass to a little green silk ribbon underneath the stalk, because they are not otherwise either safe or popular. The Tulips and Anemones, I must also give her notice, will shut up in the dark or during a coldish drive, and will open widely again in the light and warmth.

The colours by candlelight are most beautiful. The pink, and white, and pale blue Anemones are also extremely pretty, and I cannot say too often how much more a *recherché* air is given by artistic taste in the choice of colours, than by a grand assortment of “fine cut flowers” put together “anyhow.”

The variegated foliage is sometimes very pretty in bordering such bouquets. Begonia leaves especially come in delightfully; but where the whole foliage is to be first arranged, keeping a flat head of leafage, the foliage of the Scarlet and Unique Geraniums comes in very well, while the stalk of each separate flower can be thrust down through it. The green does show a good deal with effect, and a red and white border has an extremely good appearance.

Three distinct rows—that is, centre,—first row, second like the centre, and outside mixed, are generally enough, with a pretty fringy edge of Fern or some nice drooping leaves to finish off the whole.

MIXED BOUQUET DESIGN.

I think in connection with the foregoing suggestions, which refer rather to the arrangement of flowers when we have but few appliances at hand, it will be well to describe a mixed bouquet, in which we are chiefly governed by the flowers we have. I am quite sure

this is a frequently occurring case, for which it will be useful to provide; though, of course, it is rather necessity than choice that causes us to have such naturally ill-assorted flowers. Still I have seen them look really well.

We will suppose that we have a basket of Scarlet Geraniums, pink Roses, dark crimson Verbenas, blue and yellow flowers of some kinds, and white ones as well. Some are, in such cases, in the habit of arranging all the less brilliant colours, and then putting in here and there a dash of scarlet, or of bright primrose colour, to enliven all, gradually bringing the brightness up to the edge—this is to say, increasing the amount of scarlet as it approaches the edge—and this certainly, in some cases, has a decidedly good effect. And though the quantity of flowers used is very great, they are generally of kinds that are so very plentiful that the number signifies but little.

Where a dense mass of flowers can be afforded, every colour in the rainbow may, by a very tasteful arranger, be brought in well. I have heard, for instance, a beautiful "flower-dresser" (French), ask for two morsels of bright yellow, and two or three little pieces of anything that is blue, just because, as she said, she had none of these amidst all her other flowers. She took good care, however, to put at least *two* of each, the smallest dot of colour even though it might be.

Once in a November when a sudden frost had late in a beautiful October annihilated almost every flower within reach of a very sudden demand, I saw one of the best bouquets I remember arranged under difficulties of so grave a kind. Scarlet Geraniums, a few white Roses, and a handful of the common China, were absolutely all the flowers that there were at command. The centre then had one white Rose. I forget whether or no there were four or five sprays of scarlet rather below the Rose level, round it. I fancy that it was in the arrangement I speak of that these appeared. Still, their use must depend a little on their own rich deep colour, and on the paleness of the pink Roses near them. After the centre came the pink Roses, all gathered together with very little green, and then the white Roses were grouped around at nearly regular intervals, filled up with very fresh-coloured green, shading from light into dark. Behind each Rose, too, there was a little foliage; and then came one close, dense mass of Scarlet Geranium, finished by a border of its own velvety leaves. Altogether it looked so pretty and the poverty of the material was at the same time so evident, that I doubt if any one young lady in the room that night did not lament the want of knowledge which had prevented her from rivalling that much-admired style.

There is a Geranium, but I grieve to say I know not its name; it is, however, in itself a bouquet, and it flowers so charmingly all through the later autumn and the winter season, that I know few plants that are more invaluable. It is a low-growing almost creeping kind, with very soft, velvety, dark leaves, quite as dark often as those of a Myrtle, cut into somewhat of an Oak-leaved shape, only hardly so far divided, and jagged in some degree around the outer edge. It is veined almost with black, and the flowers growing on the shortest of footstalks are of a deep rich crimson, veined with black, and very small and close-growing. It is very old, I knew it as much as fifteen years ago, and then we always called it "The Old Geranium;" and it was continually in those days worked on cloth, velvet leaves cut out and laid upon it with a little gum, and crimson cloth sewed with black floss silk for the beautiful little flowers.

A bouquet, or vase frame, covered with the beautiful drooping sprays of this peculiarly lovely plant with its short glowing crimson blossoms starting in every direction is indeed most charming.

To be continued.

DESTROYING THE MEALY BUG ON GARDENIA FLORIDA.

I **RECENTLY** succeeded in cleansing a *Gardenia florida* from that pest called mealy bug. It is a large plant, and has often been subjected to the old system of cleaning by a sponge with a little soft soap and water; but the plant in question, ~~let me be~~ ever so careful, would sometimes have its shoots and leaves disfigured in cleaning. I had a Cucumber-bed made up; and as it was becoming warm, and a two-light box was placed upon it, an idea struck me that as the fumes of the ammonia arising would kill plants if too strong, therefore it might kill insects as well.

I made a large hole in the centre of the bed, and put two bricks at the bottom for the pot to lie upon sideways; for, although the frame was moderately deep, the plant was too large to stand upright. I placed the bricks, because I thought that if the pot rested on the dung the roots might suffer.

I put in the plant, closed the frame, and left it for an hour. Upon then examining it the insects were still alive. I thought the fumes would either kill the insects or plant soon, so I left it in for three hours; I then took it out and examined it again—not an insect was alive, but the plant seemed to have enjoyed the process.

I then, with the garden engine, gave it a thoroughly good washing.

It has often been remarked to me that a *Gardenia*, after it has once become sickly, never recovers again; but it is not so with the plant I mention, for since its immersion in the hot steam of a Cucumber-bed, no plant could look better or be in better health.

Other plants, if the foliage is not too tender or the plant too delicate, might be subjected to the same treatment, which is no trouble in comparison to the old system of cleaning plants with the sponge and soap. If plants were thus treated about two or three times in the year—that is, potted plants, we should not be so annoyed with the appearance of the mealy bug.—J. EASTWOOD, *Gardener to E. Nathan, Esq., Didsbury Lodge, Manchester.*

GREENHOUSE CULTURE OF PELARGONIUMS, ROSES, AZALEAS, AND LILIUM LANCIFOLIUM.

LAST autumn twelvemonth I built a small lean-to greenhouse heated by a flue (aspect south), and stocked it with some of Turner's best Pelargoniums and Azaleas, and a few Tea-scented and other Roses from him and Paul in pots on their own roots. Nothing could have been more healthy than all these plants were during the winter and spring of last year; and up to June or July, 1860, I had as fine a show of Pelargoniums as it was possible to see in so small a space. The Roses also were most healthy and vigorous, without a trace of blight or mildew. Early in the autumn the Pelargoniums were out back, and put out in the shade till they had started a bit, and then repotted and brought into the greenhouse, where they have remained till the present time; but instead of being healthy bushy plants this spring and now they have been leggy weak plants, and the leaves have presented an unhealthy appearance, many of them turning yellow and dropping off, and almost all more or less tinged or spotted with yellow. Does not this arise from watering them with the sun on the greenhouse, or too near the time of the sun coming out? and ought not the first shoots to have been pinched back? If so, when and how often to prevent their presenting the weak leggy appearance they do? I should add, that during the winter they hardly appeared to grow at all; but when they did they grew very rapidly, and did not commence blooming till near the 1st of June.

The Roses were repotted about the same time as the Pelargoniums, and stood all the winter on the flue, which runs along the front and sides of the greenhouse between the stage and the path; and during the winter I repeatedly observed how much more healthy they looked than the Pelargoniums and Azaleas; but since they put forth leaves and buds they have almost all been more or less infected with mildew, which first appeared on the *Géant des Batailles* struck here last summer, and then spread to the *Teas*—as Goubault, Viscomtesse des Cazes, *Devoniensis*, &c. I have tried flowers of sulphur without effect to stop this pest for the last three months, but cannot get rid of it.

The Azaleas have never been repotted since I bought them in March, 1860 from Turner until about a fortnight ago, but

they remained all the time in the greenhouse; and though they did not grow much or bloom so well this spring as last, I was tolerably well satisfied with them until near the close of their blooming, when they began to wither in the foliage. They have been since repotted and put into a small brick pit on the Cucumber-bed, but they look worse instead of better. A mixture of sand, chopped and rotted turves and cowdung, well turned and stirred together, is what my man tells me has been used for repotting; and half a dozen roots of *Lilium lancifolium*, which were splendid last year, have all died this winter, and I found the pots in one or two instances full of grubs of which I have no knowledge.

Will you also kindly inform me how the *Cyclamen persicum*, and *Vallota*, and *Lilium lancifolium*, should be treated after they have done blooming?—C.

In the first place as respects the *Pelargoniums*, you do not tell us what heat and air you gave them, as too much of the one and too little of the other, would, of itself, make them leggy and drawn up. We do not think there was anything wrong in the plants growing so little in winter. Provided they are kept healthy, the less they grow at that time the better. In fact, if the florist kinds had leaves the size of half-a-crown, and healthy, we would much prefer that size to having them as big as half-a-crown, or larger. There may, however, have been something in the pruning and cutting down. Before that is done, we prefer the plants to be kept rather dry, and fully exposed to the sun, and to be kept rather dry and in the sun before the buds break and commence growing. The fancy kinds will not stand so much drying as the more succulent florist kinds. In wet seasons the plants should either be laid down, or protected in some other way from heavy rains. The potting should take place after the young shoots are showing; and, in general, it is best to place in a size less pot, and repot again either before winter or the beginning of spring.

The stopping of these shoots is a matter entirely of circumstances and the object contemplated. Many plants will break so regularly, and the shoots be so numerous, that there is no necessity for stopping any—in fact, there may be need for thinning out some of the weaker shoots. These plants are best for furnishing a regular early blooming, say in May. If, however, it is desired to have a uniform blooming, and moderately early, and two or three shoots come away much more strong than the others, these should have the points nipped out early, that two or three shoots may come from them more uniform, and in strength like the bulk. If the shoots come strong and thin, stopping them all will furnish a plant better. When a succession of blooming is desired from plants rather similar in size, a somewhat regular stopping of the second lot will cause them to bloom some six weeks later. Unless for these particular objects, when the shoots come on a plant thick enough and uniform in strength, it is merely a waste of time and strength to stop the shoots of such a plant. The mere stopping will not secure bushiness of growth; that must depend on the plant having plenty of light and air, and not too much heat, say ranging from 45° to 50° with fire heat, and a good rise with additional air from bright sunshine. There may also be something in watering. Until the middle of April it is generally best to water in the morning, say about ten o'clock. From the middle of May to the end of September, it is generally best to water in the evening, for reasons repeatedly given. At none of these waterings should water be placed on the foliage. If from insects or other causes it should be deemed necessary to syringe the foliage, that syringing should be given so that the house should either be shaded, or the foliage be dry before the sun strikes upon them. I need not say that all condensed moisture during the night should also be dissipated by giving air early, so that the leaves are dry before the sun shines on the foliage. Inattention to these matters is a fruitful source of the leaves being spotted and blotched under glass, and a deficiency of air is a chief cause of legginess, especially when shading is also used.

I suspect your *Roses* looked too well in winter—unless you kept them over the fire for the purpose of getting early flowers from them, and in that case you could not expect them to continue fine all the summer. For *Roses* to bloom well in May, June, and July, they could not be kept too cool in winter if they were safe from frost. The more they grew then the more weak would the growth be, and therefore the more liable to insects and mildew. We would take them out of the house, and place them in a dry shady place, and persevere in dredging the points with sulphur and syringing it off in a week or so.

The plants might then stand in an open place exposed to the sun, and if the pots were half plunged all the better. If any soft shoots appeared mildewed they might be nipped off at once, and the heads be syringed with sulphur and soot water. In the beginning of September fresh pot, and in October part prune at least, and keep the plants as cool and dry in winter as would be compatible with safety; and next season you may reckon on fine plants, with good flowers and little or no mildew.

You did right in turning your *Azaleas* into a brick pit, if you can syringe them there, and encourage free growth before the bloom-buds set. We fear, however, from your description of the leaves, either that the plants had got too dry from the water escaping at the sides of the pot instead of penetrating the balls, or that the leaves have become infested with thrips or some similar insect. In either case the brick pit was the place to bring them round, and a good smoking could easily be given if insects were present. In such circumstances, however, we would not have repotted the plants; we would rather have top-dressed, and used weak manure water to stimulate fresh healthy growth, and when that was obtained we would have given larger pots if necessary. *Azaleas* will bloom beautifully in small pots; and when shifted, the roots on the outside of the balls should be gently disengaged, that they may enter at once in the new soil. In a case of bad health it is often prudent to shift a plant into a much smaller pot, and into light sandy soil, after getting rid of all the old soil possible without injuring the good roots. In such a case a close moist atmosphere as your pit would yield from syringing the wall, giving but little air and shading from bright sunshine, would encourage active growth. Whether such treatment applies to your plants we cannot assuredly say, though we strongly suspect it; but we have not a doubt that the sooner you take them out of the sand, leaf mould and cowdung in which you have placed them the better it will be for them. Fibry heath soil, and silver sand to lighten it, are the only materials in which you can hope to recover them. Nothing but the grossest feeders could thrive in the strong food you have given them; and even they would shrink from it if troubled with sickness or indigestion.

The *Liliums* generally keep well in a cellar. If the bulbs were not ripe, they might be killed from being exposed to the frost. The grubs might be encouraged from too much richness in the compost. A rather simple soil and plenty of manure waterings when growing suit these bulbs best. When done flowering, refrain giving water as soon as the leaves decay; the soil, however, should not be quite dry. If the pots are placed on the floor of a shed or a cellar, and covered over with moss or anything of that kind, they will be kept moist enough.

When *Cyclamens* have done flowering, water as long as the leaves keep green. When they decay, set the pots in a shady place, where they will receive hardly any water, and yet not be quite dry. As soon as growth commences, top dress or fresh pot. The *Vallota* should be kept coolish in winter, but not dry, though little water will be wanted. All things considered, I consider that you and your helper have got on very well, and you will do better as you get more experience.—R. F.]

THE FERTILISATION OF WHEAT.

SINCE I last wrote to you on the fertilisation of Wheat, I have taken the trouble to examine the process more carefully: and I am enabled to state positively that the husk opens at the critical moment, and that the anthers then split (apparently with the motion) on rising on their stamens—in fact, that the whole process, exactly as I described it, including the closing of the husk and the shutting out of the anthers, may be watched and witnessed by any person who will bestow a little patience and half an hour's examination.

The anthers may actually be seen moving by starts from their sessile position, and struggling upwards to free themselves; during this they burst, and the pollen may be seen darting out like sparks from a rocket. When they have reached their full height on the stamens they are seen to turn over, and the remaining pollen falls in a little shower outside the husk; the husk then commences closing, and the whole operation occupies no more than five minutes.

I am thus enabled to say positively, though with all due deference to so experienced and acute observer as Mr. Beaton, that he is in error in supposing that the anthers have shed their pollen while in the sheath; and, by way of proof, I have sent to

the Editors a few ears of Wheat in a state to confirm my view of the subject. They will find, and Mr. Beaton may see with his own eyes, fertilised and unfertilised grains in the same ear, long after the ear has risen from the sheath.

I think, too, I am right in saying that the supposition of the fertilisation in the dark, in a close envelope, is contrary to the analogy of the whole vegetable world. If we look at those plants so closely allied to the Wheat, the *Triticum repens* and *Lolium perenne*—the process of fertilisation in their case takes place, without a doubt, as I have described it in that of the Wheat plant; and, even in the case of submerged aquatic flowering plants, such as the *Utricularias*, and several *Potamogetons*, the fertilisation does not take place under water, but the organs are enabled to rise to the surface and expose themselves to the influences of the sun and air during the operation; and these influences, I believe, judging from analogy, to be necessary to the fertilisation of every flowering plant.

Mr. Beaton, I see, supposes that I have never seen the pollen of Wheat. On the contrary, before writing on the subject, I placed the stigmas of several grains under one of Powell and Lealand's most perfect microscopes, which I have been in the constant habit of using for the last ten years and more. Where the anthers were green and immature, no pollen was visible on the stigmas; and on the other hand, after they were protruded from the husk the pollen was most plainly visible. The real size of the pollen grains is, greatest diameter 0.0440 inch, smallest ditto 0.0380 inch. The diameter of the smut spores in Wheat is 0.08330 inch, or about half the size of the pollen.

The fertilised organs of the Mallow, seen by reflected light, are the most beautiful of all this class of objects.

The mystery, however, remains—what takes place after the deposition of the pollen? How is the wonderful swelling of the base of the stigma effected which finally becomes the grain? The fertilisation, strictly speaking, does take place in the dark after the closing of the husk; but what is the manner of it? Is the pollen grain pierced by one of the little horns of the stigma, or do these close round it as I have sometimes seen? No doubt the living germ passes in some way from the pollen grain into the duct of the stigma, as the spermatozoon in the animal creation passes into its own proper receptacle; but what takes place there, probably, no mortal man will ever know.—H. C. K.—*Rectory, Hereford.*

P.S.—From some cause or other the anthers are occasionally found imprisoned in the husk, sometimes quite enclosed, sometimes nipped by the closing of the husk, while the grain inside is found swelling.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE.—It is rather a "come down" from reporting two grand Rose Shows within a few days of one another to chronicle the proceedings of this minor body, particularly as the number of objects brought before it is by no means what was anticipated. The proposal that the promenade days and the committee days should be made to synchronise, may, perhaps, make an improvement, as the objects shown will be then seen by a larger number of persons—one grand desideratum with all introducers of novelties. Partiality in such a body composed of so many elements is plainly impossible; but there is another evil which may creep in, and which is almost indigenous to a large Committee—viz., capriciousness; at one time giving awards with a liberal hand to things unworthy of it, at another refusing it where justly due. One knows how in other matters where we have to do with large numbers this interferes with right judgment, and hence the need of a word of caution. The value of the body is seen, not only from what it rewards with its favours, but also by its rejections; and it is really astonishing to see what rubbish, yes, downright rubbish, is sent by infatuated raisers in the country, who must, indeed, have very large eyes to make swans out of such geese.

A very fine Delphinium was exhibited by Mr. Wheeler, of Warminster, to which the appropriate name of *alopecuroides*, or "like a foxtail," was given, for it was as close and thickly set as any *eynard's* brush. The flowers being double, and the habit of the plant dwarf, its very closeness seemed to me to take off from the elegance of its appearance. For this a First-class Certificate was awarded.

From Messrs. Downie & Laird came a new branching Inter-

Mrs. Conway, Brompton, some varieties of bedding *Geraaniums*, &c., much behindhand; and from Mr. Wood, of Bedford Nursery, Hampstead Road, some fancy *Pelargoniums*, which we might have looked at fifteen years ago.

Mr. Dean, of Bradford, contributed a New Zealand Fern, called *Hypolepis distans*, which will, from its creeping and dumpy habit, be valuable as a pot variety, as it will trail over and cover the sides of the basket or whatever it may be in. For this a Label of Commendation was awarded.

Messrs. Carter & Co., of Holborn, exhibited some specimens of a new double *Clarkia*, very distinct and beautiful, much brighter in colour than any of the older varieties, a rich rosy pink, and apparently quite constant in its double properties. A figure of this will appear in the "Floral Magazine." For this a First-class Certificate was awarded.

The same award was given to a very magnificent scarlet *Verbena*, called *Foxhunter*, from John Miller, Esq., Upway, near Dorchester, brighter in colour than any out, apparently a good trusser, filling up well in the centre, and very large. I measured one pip, $1\frac{1}{4}$ inch across. Equal in size to *Grand Eastern*, but, of course, with a brilliancy of colour it does not possess.

From Mr. Bull came *Phalænopsis Schilleriana*, an excellent thing, but too small to be awarded anything as yet; *Cyanophyllum speciosum*, not so good as the older variety; *Begonia Xeramis*; *Calceolaria Sparkle*, &c.

Messrs. Veitch & Son sent a very pretty *Calandrinia umbellata* major, a rock plant from Chili. For this a Label of Commendation was awarded; as was also a very pretty *Primula* from the snow line of the Andes, and, therefore, quite hardy.

Messrs. Charwood & Cummins, of Covent Garden, sent a very beautiful variety of *Nemophila*, called *Discoidalis elegans*, with all the habit and appearance of its parent, but with the petals of a rich mulberry edged with white. It was considered very striking, and received a Label of Commendation. This will be figured also in the "Floral Magazine."

Mr. G. Smith, of Hornsey Road, sent two new *Verbenas*—"The Moor," very dark, and *Fireball*, which might have been accepted had not *Foxhunter* been before it. He also exhibited a very nice stand of blooms of various kinds, including *Grand Eastern*, *Garibaldi*, *Madam Zindier*, &c. For this collection a Special Certificate was awarded. He also sent a good plant of his dwarf bedding *Calceolaria "Canary."*

Mr. Melville, of Dalmeny Park, sent several varieties of *Tropeolums* and *Sweet Williams*. Some of the former were very promising as to shape and substance, but more was required to be seen of them before a judgment could be pronounced.

The Rev. George Jeans, of the Vicarage, Alford, sent a box of seedling Pinks, which although pretty were not considered equal to others which have been before the Committee. The same gentleman sent also a very pretty *Delphinium*, said to be a seedling from *magnificens*.

Some *Achimenes* and other plants were contributed from the Society's Gardens; and it was announced that the next meeting would be held at Chiswick, to examine and compare the various kinds of *Verbenas*, &c., sent to the Gardens.—D., *Deal.*

HOUSE SEWAGE—TRANSPLANTING RHUBARB.

LAST spring I purchased your pamphlet "Muck for the Many," and have acted upon it, by making a tank and bringing every description of drainage from the house into it, and putting down a pump. I find it to be of great service to garden flowers, shrubs, and especially *Roses*; but I am told here that I have missed it in one point of vegetables, by applying it to Onions. A while ago I had three beds of apparently very nice Onions intermixed with Lettuce; the latter have grown very well, but not hearted very well, and the former are every one now full of a grub, and, of course, gone. The gardeners here tell me that I have brought the grub by my tank water. [Nonsense.] I doubt it, and am more disposed to attribute it to too green manure in the beds in spring. However, all my Onions are gone.

Secondly. My *Rhubarb* has come very weak this year. I fear I have cut at it rather too hard (having a large family). Would you recommend me to take it up and replant it? If so, when? and would it do with shade?

[Take it up, divide the roots, leaving a bud on each piece, and plant it in a new bed in March, giving it plenty of manure.]

The next seems to me the marvel. A gardener here tells me that he has grafted a common Strawberry plant—say British Queen, on the common Dog Rose, and that it has grown and fruited. I never heard of such a thing. Did you?

[The fellow who told you so has insulted you by asking you to believe such a statement.]

Am I doing right in transplanting Carrots on my Onion-beds?
—A SUBSCRIBER, *Altrincham*.

THE ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW.

ADDITIONAL NOTES.

BESIDES the Roses, which of themselves made a grand display, there were several fine groups of elegant-foliaged plants, consisting of Palms, Ferns, Caladiums, Araucarias, Begonias, Anacardium, and others, contributed by the leading London nurserymen, including Messrs. Veitch & Son, Messrs. A. Henderson and Co., Messrs. J. & C. Lee, Messrs. J. & J. Fraser, Mr. Standish, and Mr. Bull. These occupied the central stand and filled up the side table next the glass. Other ornamental plants, which served to give relief to the long lines of Rose-boxes, came in the shape of Fuchsias, Pelargoniums, Petunias, &c., from Mr. Turner, Mr. Gaines, Mr. Veitch, and Mr. Bull. One of the finest subjects shown on this occasion consisted of three pans of the rare *Disa grandiflora*, in exuberant health, one stem bearing four large, perfect, and splendidly-coloured flowers. This came from C. Leach, Esq., of Clapham Park. Some plants which had been exhibited at the meeting of the Floral Committee on the 9th were again brought forward. Among the more attractive of these were Mr. G. Smith's yellow shrubby *Calceolaria canariensis*; a very dwarf double-flowered perennial Larkspur from Mr. G. Wheeler, of Warminster, remarkable for its densely compact flower-spike; and a pretty greenhouse Fern, suitable for baskets, called *Hypolepis distans*, shown by Mr. W. Dean, of Bradford. Mr. G. Smith had some very fine cut Verbenas; and cut Verbenas were also shown by Mr. Turner, who had besides stands of Carnations and Picotees. Messrs. Paul and Son showed some good summer Phloxes. There were three magnificent clusters of Black Hamburg Grapes from Mr. Young, gardener to Viscount Barrington, and two well-fruited pot Vines of Ingram's Hardy Prolific Muscat, from Mr. Standish. John Hawes, Esq., of Adelphi Terrace, sent a very handsome group of anatomised leaves and seed-vessels; and some charming groups of imitation paper Roses were shown by Mr. Helbronner, Regent Street. Finally, two sets of Mr. March's dinner-table decorations, consisting on this occasion wholly of flowers, Ferns, &c., were shown by Messrs. Dobson & Pearce, of St. James' Street. These were improvements on the original, though of the same design, and were accompanied by some very elegant smaller glasses suitable for bouquets.

A very effective group of garden ornaments in Majolica ware, consisting of seats, vases, pedestals, and flower-pots, &c., were sent by Mr. Phillips, of 155, New Bond Street, all manufactured by the Messrs. Newton & Co.

A collection of meteorological instruments were sent by L. P. Casella, 23, Hatton Garden.

Mr. Sooman, of Stoke Newington, brought specimens of his garden shades, which were set up on the conservatory terrace. This is a simple contrivance for effecting a shade for garden seats or tables. They can be set up in a few minutes, and from their gay colours are very interesting objects in garden scenery.

CULTURE OF THE GRAPE VINE.

(Continued from page 296.)

VINES IN POTS.—There are some advantages in cultivating Vines in pots to bear fruit over the ordinary mode of planting them out in borders; and one is, that the pot Vines may be set to rest earlier and more completely by placing them behind a north wall. When Vines in borders are forced early it is always difficult to keep them at rest in the autumn following, especially if it should be a mild one. I have seen them break their best buds in August or September, and show good bunches of fruit at that untoward season, thus disappointing and tantalising the cultivator; whereas those in pots placed in a cool situation remained quiescent and could be pruned safely at the proper

time. Another advantage is, that those in pots can be brought into the house in succession, and thus in one house the season of fruit-bearing prolonged almost at pleasure. Vines in pots, too, may be taken out of the house when the fruit is ripe, and placed upon the table to be cut and eaten by the company. In such a place they are objects of ornament, pleasing the eye as well as the palate. I have mentioned previously how very easy it is to grow Grapes, provided sufficient heat can be kept up. In a bushel of earth a Vine may be planted, and with proper management that Vine will produce several bunches of Grapes in twelve months. Nay, more, a bud from a Vine may be planted in a small pot in January, repotted and grown on, and will ripen fruit in the next season almost as early as the cultivator may please. It is really astonishing in how little soil the Vine will grow and be productive. For instance, see the Vines in the large conservatory at Chiswick. They have no elaborately prepared border of large extent, but are grown in moderately sized boxes, and yet produce good Grapes annually and plenty of them. I remember visiting, many years ago, the celebrated market garden at Isleworth belonging to Mr. Wilmot. He, as I may say, stuck in Vines anywhere under glass, and they grew and brought forth fruit abundantly. In narrow borders under the footpath at the back of the Pine-pits, scarcely 4 feet wide, he planted Vines which I have seen produce excellent fruit. In taking up old Vines we very often find the roots running down close to the wall, seeking food at home instead of wandering away into the rich and scientifically prepared border for them. Bearing these ideas in mind, let no one that has a few square feet of glass despair of being able to grow Grapes.

To return to pot culture let me remark that the one use of growing Vines in pots is to serve as a help to the border-planted Vines. There are many places where the owner may choose to put up one vine only, and in such a case a few grown in pots will be very useful to produce early Grapes.

If, however, the system of pot culture is practised largely, then a house should be devoted to them entirely. At the vineyard at Garston, Mr. Meredith, perhaps, carries this system to a greater extent than any one else in England; at least he does so more than I have witnessed anywhere. Last March I called there and saw one house filled entirely with pot Vines, the fruit thinned, and fast approaching to maturity. They would be ripe in April. The house was a long narrow one facing east and west, and powerfully heated with hot water on Mr. Meredith's own plan. Close to the wall on each side there is a long narrow border formed, with a flag bottom and flags set on edge, about 18 inches deep. When empty this border looked something like a long horse-trough, where half a regiment of cavalry horses might feed or drink out of. The Vines having been grown in 14-inch pots the previous year, their wood ripened early, and the Vines set to rest early also, they had been turned out of the pots and planted in the borders, and the spaces between them filled with rich compost; this was done early in the autumn, and the forcing commenced very gently, the heat increased as the growth went on. By plunging, as it were, the balls in this fresh compost the Vines put forth fresh roots into it, and were thereby enabled to swell and finish off the crop much better than if they had been kept in the pots. It certainly, at that early season, was one of the finest sights of successful early forcing of the Vine I ever saw.

At Sion House, near Isleworth, the Duke of Northumberland's place, some years ago, I witnessed a successful growing of Vines in pots on a large scale. Mr. Iveson was head gardener there then. There was a long range of wide pits in which Pines had been cultivated. For some reason or other the growing of Pines was dispensed with; and, in order to make those pits useful, Mr. Iveson grew a lot of young Vines in them, got them very strong, and ripened early in the autumn; then he turned out of the pits, pruned them to a moderate length, and allowed them a period of rest. After that he returned them into the pits, placing the pots on bricks as near the front as he could for the hot-water pipes, and commenced the usual routine of culture in regard to heating, watering, stopping, thinning, &c., and a very good crop of fruit he obtained.

I give these examples to show how easy it is to grow Vines in pots, and to show, also, the various modes that good Grape growers adopt in order to obtain fruit from them at unusual seasons. Some of my readers may wish to know what kinds are best to grow in pots. I would avoid strong growers that produce large bunches, such, for instance, as the Syrian, or the Barbarossa. The following are more suitable. *Black-coloured*:—

Black Hamburg (the best of any), Ingram's Prolific, Early Black July, and a few Black Prince. *White*—Royal Muscadine, Dutch Sweetwater, Golden Hamburg, and one or two Muscat of Alexandria. I might multiply the number of kinds, but the above are good bearers, and, excepting the last, all free setters. I recommend a few Muscats, because in pots the quality is so excellent. I have grown this kind in pots, and had the berries of a rich deep yellow colour.

I have stated that a Vine may be propagated from an eye or bud, and grown on by frequent repottings and applications of liquid manure for one year, and will then be strong enough to bear five or six bunches the following season. This high culture, however, requires so much judgment, carefulness, and extreme attention, that I would rather prefer recommending the young beginner to either grow or procure a year-old Vine, and train them to bear fruit the following season. It is a safer and more certain method. Supposing then, year-old Vines are selected to grow for the purpose, let them be ripened and put to rest as soon as possible, and six weeks previous to commencing growth prune them down to two buds; two are better than one for fear of accidents. Then pot them in a rich compost of three parts turfy loam, one part lumpy dung, a few pieces of charcoal, and a little lime rubbish. Mix these all together, leaving them in as rough a state as possible. Put them in large pots, rather deeper than ordinary, and from 12 inches to 15 inches wide. Drain well, and put some small bones and inch-square pieces of green turf upon the drainage. Then set in the ball, nearly entire, and pack the compost around it till the pots are full. Press it down firmly, and then it will leave sufficient space to hold water. Commence to grow these pot Vines as early as convenient, certainly not later than March, in order to obtain ripe wood early in the season. Train them up to within a foot of the glass, and when the shoots are 6 feet or 7 feet long, pinch off the end to strengthen the lower leaves and buds. The uppermost bud will break again, and let it be trained forward 3 feet or 4 feet farther, and then stop it again, and keep the end stopped after that till the year's growth is perfected. The laterals must be stopped at the first leaf, and kept stopped at every succeeding leaf. When the wood begins to turn brown, cut all the laterals off pretty close to the main shoot. If required for a very early crop, the pots should be set out of doors behind a north wall in July and pruned in September. Cut them down in proportion to their strength, or according to the space they will be required to fill, but never exceed 6 feet or 7 feet in length, however strong the Vines may be.

Now, if you have the convenience, a little bottom heat of 70° or 80° will be useful, but this bottom heat, though certainly beneficial, is not absolutely necessary. The internal heat of the house will answer nearly as well. When the buds break and bunches are visible, stop each shoot close to the bunch, being very careful not to injure the leaf opposite. The after-treatment is similar to that I have described for Vines on the rafters in the stove—the stopping the laterals, thinning the bunches, and thinning the berries on each bunch, keeping up a moist atmosphere in the earlier part of the forcing, and a drier atmosphere when the fruit begins to show colour, &c. There is one peculiarity however, different in pot culture to border culture—and that is, as no wood for the succeeding season is required, all the strength of the Vine may be thrown into that year's crop of fruit. By this it will be understood that I do not recommend fruiting the Vines twice in the same pots. I would rather grow more young Vines and prepare them for bearing the next year than attempting to get a second crop from those that have borne fruit. I have tried them repeatedly, and so have others, but the success was very partial indeed.—T. APPELEY.

(To be continued.)

VARIATION IN SEEDS OF THE SAME PLANT.

To prove a lot of Orange Globe Mangold Wurtzel received early in the season from the grower, I sowed twenty seeds: or seed-pods, and was surprised to see come from one pod three plants, one of which was a bright red, the others true to their kind. There could not have been any mistake, as the pod was washed through, and above the soil, by the united efforts of the three plants, the points of whose leaves remained enclosed in the pod for several days after the plants were up.

I saw that the question of cross-breeding and hybridising has been an important one, I thought this fact might be interesting;

and I shall be glad to learn if such instances are common.—WILLIAM FOSTER, JUN., *Stroud*.

[It cannot be said in this instance that these three plants came from the same pod or fruit, as in Mangold Wurtzel the ovary is only one-celled and one-ovuled; what therefore appears to our correspondent as one "pod," was, in reality, three distinct seed-nuts (speaking botanically) the product of three separate flowers. We are much obliged to him, however, for his communication, which records an interesting fact nevertheless, and may serve as a lesson to those who often unreasonably complain that seeds are mixed.—Eds. J. or H.]

FERNS UNDER GLASS.

(Concluded from page 262.)

No plants are more easily grown than Ferns, but we have found out also that they are as readily killed—at least such has been my experience.

The following list contains only those we have grown ourselves, or have often seen growing in a house such as we have attempted to describe:—

D, is for deciduous; E, points out such as should be planted high so that their roots can run on the rock stones; I ft., &c., shows the height in feet the several plants attain when of specimen size. All of them will thrive and do well in the house described.

TREE FERNS.

	Native country.	Feet high
<i>Alsophila australis</i>	New South Wales	6 to 10
<i>excolata</i>	Norfolk Island	10
<i>radens</i>	Brazil	4 6
<i>Amphicosmia (alsophila) capensis</i>	...	8 11
<i>Cibotium Schiedei</i>	Mexico	7 9
<i>Cyathea dealbata</i>	New Zealand	6 8
<i>medullaria</i>	New Zealand	8 12
<i>Dicksonia antarctica</i>	Van Diemen's Land	10 15

Tree Ferns are found growing in very moist or boggy places, and sometimes the places where they are covered with water; the soil about them, therefore, should never be allowed to become dry, or a partial, and sometimes a total, loss of its fronds will follow.

DWARF FERNS.

<i>Acrophorus hispidus</i>	(<i>Microlepia novae-zealandiae</i>), New Zealand	1 2
<i>imbricaria</i>	D. East Indies	1 2
<i>pulcher</i>	D. (<i>Leucostegia obscuriphylla</i>), East Indies	1
<i>Adiantum affine</i>	(Cunninghami), New Zealand and Norfolk Island	1 2
<i>cuneatum</i>	Organ Mountains and St. Catherine's, Brazil	1 12
<i>ethiopicum</i>	(assimile), New South Wales, Tasmania, and New Zealand	1
<i>formosum</i>	New South Wales and New Zealand	2 3
<i>fulvum</i>	New Zealand	1
<i>hispidulum</i>	New Zealand, Australia, Ceylon, and Mauritius	1 12
<i>tenellum</i>	(<i>pubescens</i> ?), Australia	1 2
<i>pulverulentum</i>	? South America	1
<i>reniforme</i>	Madeira, Tenerife	1 2
<i>asarifolium</i>	Mauritius	1
<i>setulosum</i>	New Zealand and Norfolk Island	1 2
<i>Anemidictyon phyllitidis</i>	Tropical America and East Indies	2 3
<i>Asplenium Altoni</i>	(<i>umbrosum</i>), Madeira	2 4
<i>axillare</i>	Madeira	2
<i>bidum</i>	(<i>fusiculaceum</i>)	2
<i>brachypterum</i>	Western Africa	3
<i>bulbiferum</i>	New Zealand	2 4
<i>caudatum</i>	...	3
<i>compressum</i>	(<i>fœcundum</i>), St. Helena	2
<i>dimidiatum</i>	(<i>zamiæfolium</i>), Venezuela	1
<i>dimorphum</i>	(<i>diversifolium</i>), New Zealand	2
<i>dispersum</i>	Tropical America	1
<i>falcatum</i>	New Zealand	1 2
<i>flabellifolium</i>	Australia	2
<i>flaccidum</i>	(<i>odontites</i>), New Zealand	2
<i>Hemionitis</i>	(<i>palmatum</i>), South Europe	1
<i>multidum</i>	...	1
<i>heterodon</i>	...	1 2
<i>lucidum</i>	New Zealand	2
<i>monanthemum</i>	Madeira	1 2
<i>proliferum</i>	...	1
<i>nitidum</i>	...	1
<i>obtusatum</i>	Tasmania	1 2
<i>officinæ</i>	Brazil	1 2
<i>polymorphum</i>	...	1 2
<i>præmorsum</i>	(<i>furetum</i>), Madeira and Tropical America	2 3
<i>laceratum</i>	South Africa and India	1
<i>rectinatum</i>	St. Helena	1 2
<i>rhizophyllum</i>	Tropical America	1
<i>acra</i>	Tropical America	2 3
<i>Veitchianum</i>	(Belangeri), Java	2
<i>Wagnerianum</i>	...	2
<i>Wittmannianum</i>	Brazil	2 3
<i>corcovadense</i>	Brazil	3 4
<i>ognatum</i>	(<i>australe</i>), Tropical America	1
<i>Hillebrandii</i>	(<i>Lomaria</i>), Chili	2

Native country.	East high.
<i>Blechnum lanceola</i> , Brazil	1
<i>occidentale</i> , Tropical America	2
<i>Bolusia insignis</i> , China (Hong-Kong)	2 to 3
<i>Callipteris ambigua</i> (malabarica), East Indies	4
<i>Campyloneuron angustifolium</i> , Jamaica	1
<i>tenosum</i> , South America	1
<i>incidum</i> (vigidum), Tropical America	1
<i>nitidum</i> , West Indies	2
<i>phyllitidis</i> , West Indies	2
<i>Cheilanthes alabamensis</i> , Southern United States	1
<i>argentea</i> , Siberia; Lake Baikal, and Altai Mountains	1
<i>elegans</i> (lindigera of some), High mountains of Mexico and Peru	1 2
<i>fragrans</i> , South Europe	1
<i>frigida</i> , Mexico	1 1/2
<i>lindigera</i> (tenuis), East Indies and Australia	1
<i>micromera</i> , Mexico	1
<i>profusa</i> , Namaqua Land (South Africa)	1
<i>spectabilis</i> (chlorophylla), Brazil	3
(This has drooping fronds, plant high.)	
<i>Cheilanthes</i> should not have the fronds damped with the syringe at any time, and should be kept moderately dry at the roots during winter. The fronds must not be allowed to flag from excessive dryness; they rarely recover if that occurs. Plant near the glass.]	
<i>Cibotium Barometz</i> , Philippine Islands	8
<i>Davallia bullata</i> , D. K. Nepal, Assam	1
<i>canariensis</i> , E. Canaries	1
<i>dissecta</i> , E. Malay Archipelago	1 1/2
<i>elegans</i> , E. China, Java, Trop. Australia, Tahiti, & Madagascar	1 1/2
<i>solida</i> , E. Pacific Islands and Java	1 1/2
<i>Dicksonia culcita</i> (Balantium culcita), Madeira and Azores	6
<i>Didymochloa lunulata</i> (truncatula), Malay Archip., Trop. S. Amer.	3
<i>Diplazium decussatum</i> (lasiopteris)	2
<i>Thwaitesii</i> , Ceylon?	2
<i>Drynaria diversifolia</i> , E. East Indies	1
<i>Elaphoglossum conforme</i> , South Africa	1
<i>crassinerve</i>	1 1/2
<i>Gleichenia circinalis</i> , Australia	2
<i>dicarpa</i> , New South Wales	2
<i>dichotoma</i> ? West Indies, &c.	6
<i>flabellata</i> , New South Wales	6
<i>spunulacea</i> (glaucescens?), New Zealand	1 1/2
<i>Goniophlebium appendiculatum</i> (scriptum), Mexico	1 1/2
<i>Catherinus</i> (glaucom)	2 1/2
<i>latipes</i>	2 1/2
<i>loriceum</i>	1
<i>menisclifolium</i> , Brazil	3
<i>Goniopteris Fosteri</i>	2
<i>Grammitis</i> (Leptogramma) <i>rupestris</i> , Tropical America	2
<i>torta</i> (rotundifolia), Australia	2
<i>Hymenophyllum crispatum</i> , Tasmania	2
<i>demissum</i> , New Zealand	2
<i>flabellatum</i> , Tasmania	2
<i>rurum</i> , Tasmania	2
<i>scrabrum</i> , New Zealand	2
<i>tunbridgeense</i> , Madeira, S. Africa, Chili, Brazil, and Tasmanian	2
<i>unilateralis</i> (Wilsoni), Britain, Cape of Good Hope, Bourbon, Tasmania and Chiloe	2
[The "filmy Ferns" require very moist air. Plant them just within the wells, cave, and waterfall on each side. Some sphagnum (white bog moss) should be added to the soil where Hymenophyllums are to be planted; 2 inches or 3 inches depth of soil is enough. Keep the stones about them saturated with water by sprinkling them with a syringe two or more times during the day. If grown in the open fernery they must be covered with a bell-glass that has a small opening (hole) at top. Water will be required abundantly.]	
<i>Hypolepis amaurorachis</i> , Australia. (Drooping fronds, plant high)	2
<i>tenuifolia</i> (repens and <i>Dicksonioides</i>), West Indies	3
<i>Lastrea acuminata</i>	1 1/2
<i>augeocens</i> , Cuba	3
<i>canariensis</i>	4
<i>decomposita</i> (Nephrodium), Australia	2
<i>elongata</i>	2
<i>glabella</i> , New Zealand	1
<i>hispidula</i> , New Zealand	1
<i>quinquangularis</i> (pubescens), Jamaica	2
<i>patens</i> , Tropical America	3 1/2
<i>ramulosa</i> , Ceylon	1 1/2
<i>serra</i>	2
<i>tenericaulis</i> (tricoles)	3
<i>Litobrochia aurita</i>	6
<i>denticulata</i> , Brazil	1 1/2
<i>incisa</i> (vespertilionis), Australia and New Zealand	4
<i>leptophylla</i> , Brazil	2
<i>palmata</i> (doryopteris)	1 1/2
<i>sagittifolia</i> (doryopteris), Brazil	1
<i>Lomaria alpina</i> , Tasmania, New Zealand, and Straits of Magellan	1
<i>heterophylla</i>	3
<i>discolor</i> , New Zealand	2
<i>magellanica</i> , Patagonia	3
(Said to form a trunk 4 feet high on the Organ Mountains.)	
<i>nuda</i> , Tasmania	1
<i>Patersonii</i> , Tasmania	1
<i>Lygodium hastatum</i> (volubile) Climbing, not more than 2 ft.	
<i>japonicum</i> , Japan Climbing	
<i>palmatum</i> , North America Do. not more than 2 ft.	
<i>scandens</i> , Tropical America Do.	
<i>venustum</i> (polymorphum) Climbing	
<i>Nephrodium molle</i> , Tropics generally	2
<i>corymbosum</i>	2
<i>unilam</i> , Tropics	2
<i>Nephrolepis exaltata</i> , E. Tropical America	3
<i>pectinata</i> , Tropical America	2
<i>tuberosa</i> , E. East Indies	2

Native country.	Feet high
<i>Nipholobus lingua</i> , E. China and Japan	1
<i>pertusus</i> , E. East Indies	1
<i>rupestris</i> , E. Australia	1
<i>Nothochloa canariensis</i> (Maraisii), South Europe and Madeira	1 to 1 1/2
<i>tekloniana</i> , South Africa	1
<i>hypoleuca</i> , Peru	1
<i>lewisii</i> , Mexico	1
<i>laevigata</i> , South Europe and Algeria	1
<i>vestita</i> , Southern United States, California, and Oregon	1
<i>Onychium japonicum</i> , Mountains of Japan	1
<i>Phlebodium aureum</i> , Tropical America	1
<i>Platycastrum alcornocum</i> , East Indies and Australia	2
<i>gracile</i> , Australia	2
(If the two last be planted on either side of the waterfall, or anywhere about 6 feet high, they are effective.)	
<i>Platyloma Brownii</i> , Australia	2
<i>salustium</i> , Australia and New Zealand	1 1/2
<i>zotandifolium</i> , New Zealand	1
<i>Pleopeltis lirioides</i> (microsorium), Mauritius, E. Indies, and Australia	2
<i>nuda</i> (Drynaria Fortunii), China	1
<i>punctulata</i> , E. (Drynaria), New Zealand	1
<i>equanilosa</i> , E. Brazil	1
<i>stigmatica</i> , E. Tropical America	1
<i>Polypodium drepanum</i> , Madeira	1 1/2
<i>effusum</i>	1
<i>pectinatum</i> , Tropical America	1
<i>rugulosum</i> , Australia and New Zealand	1
<i>spectabile</i>	1
<i>Polystichum capense</i> , South Africa	1
<i>coriaceum</i> , East Indies	1
<i>flexum</i> , St. Juan de Fernandez	1 1/2
<i>proliferum</i> , New Zealand	1
<i>tristegium</i> (mucronatum)	1
<i>vestitum</i> , New Zealand	1 1/2
<i>Pteris arguta</i> , Madeira	2
<i>crenata</i> (ohinensis), East Indies and China	2
<i>flabellata</i> , South Africa	4
<i>geraniifolia</i> , East Indies and Polynesia	1
<i>laetata</i> , South Africa	3
<i>macrophylla</i> (adiantoides), South Africa	3
<i>longifolia</i> , Tropics	3
<i>repandula</i> (felcema), Jamaica	2
<i>scaberula</i> , E. New Zealand	1
<i>sempinipata</i> , East Indies	2
<i>serrulata</i> , East Indies	1 1/2
<i>tremula</i> , Australia and New Zealand	3
<i>umbrosa</i>	3
<i>Sitola davallioides</i> , E. Port Jackson	1
<i>rubiginosum</i> , E. Brazil, Mexico, and Peru	5
<i>Thamnopteris nidus</i> (Neottopteris nidus), Australia and E. Indies	6
<i>Todea barbara</i>	3
<i>pellucida</i> , New Zealand. (See Hymenophyllum)	2
<i>Trichomanes radicans</i> , Ireland and Madeira	1
<i>reniforme</i> , New Zealand	1
<i>venosum</i> , Tasmania, New South Wales, and New Zealand	1
(See Hymenophyllum.)	
<i>Woodia mollis</i> , Mexico	1 1/2
<i>Woodwardia aspera</i> (Doodia), Australia	1
<i>caudata</i> (Doodia rupestris), Australia	1
<i>immutata</i> , New Zealand	1
<i>media</i> , Australia	1
<i>radicans</i> , South Europe, North India, and California	3
<i>Selaginella</i> (Lycopodium).	
<i>solimera</i> , S. Martenali, S. formosa, S. dichotoma, S. Galeottii (Schottii), S. uncinata (costa), S. densa, S. apud (apodum), S. apotheca, S. brasiliensis, S. obtusa, S. helvetica, S. denticulata, S. Burghallii, S. Willdenowii, S. cuspidata, S. cuspidata elongata (cordifolia).	

(S. denticulata is the most useful of the above; it will grow anywhere where there is moisture on the stones, &c.)
 —GEORGE ABBEY, Gardener to E. Hailstone, Esq., Horton Hall, Bradford, Yorkshire.

GARDENING SUNDRIES.

I HAVE a lean-to house standing endwise, N.W. by S.E., 20 feet by 12 feet wide, which I intend keeping solely as a vinery. I have planted, by the recommendation of a nurseryman, three Black Hamburgs at the N.W. end, and three Muscats of Alexandria at the S.E. end. Can I grow, or rather ripen both sorts in the same house? Will there be sufficient room? All the Vines are planted within the house, which is to be heated with Monro's cannon boiler.

What system of pruning am I to follow? The Black Hamburgs were planted May, 1860; they have been cut back three times—once at the nursery, then 1860, also 1861. Two of the Vines now have single rods, 14 feet long, under the rafters; the third has two rods not quite so strong. Am I to allow them to bear next year? I have stopped all laterals, and the wood appears to be well ripening.

Would you give me a few hints, or recommend me a book on the pruning, &c., of the Vine, which a novice in gardening might understand? I have been recommended a small book by Sanders; I do not know the publisher, or whether it would

do for me. The Muscats were planted this year and have not done much.

Would the Pampas Grass do for the centre of a Rhododendron-bed which is to be surrounded by rock stones?

Mr. Paul, in his catalogue of Roses, describes Madame Vigneron (H.P.) as "rose, large and full." Mr. Rivers describes it, as "silvery rosy lilac." I sent for it last year. The Rose I have blooms profusely in clusters, rather small, very full, slightly cupped, white, with a shade of blush; leaf and habit do not appear to be H.P. Have I the right Rose?

Mr. Rivers recommends buds to be untied after twenty days. Is not that early? Last year many of my buds lived for six weeks and two months, and then died before the frost set in. Can you tell me where the fault was?

I wish to make some alterations this winter, which will occasion transplanting trees and shrubs. Will October do for removing bush Apple trees and pyramidal Pear trees. They are good size trees, and have been prepared by root-pruning last winter; they have been root-pruned three times in six years? An Arbor Vitæ hedge, planted four years, now 8 feet high, I must move—when would be the best month? and what previous preparation should I make? Would exposing the roots for some little time do good?

I am going to make a Rhododendron-bed. The proper sandy peat I cannot obtain, so I must collect together a compost which shall act as a substitute. We are on a clay soil, sand is rather difficult to obtain—would burnt clay to a good ash do instead? Should I get the sand, which would be from the seashore, would the salt in it be objectionable to the Rhododendron class?

How long does *Gazania splendens* remain in bloom?—J. A. P.

[With six Vines. The stems, after allowing about 2 feet from each end, will have a trifle more than 3 feet between each of the rest, which will do if the house is kept for Vines only.

You may ripen Muscats and Hamburgs in the same house, but it would be as well to have most heat at the end of the house where the Hamburgs were planted; and if you did not intend forcing early, it would be advisable to keep the Muscats back by plenty of air, so that there would be a good deal of sun heat before they came into bloom.

The Vines would be better if grown to a single rod instead of two. The rods, now 14 feet long and strong, we would cut down to 4 feet or 5 feet next winter or spring. Unless you have been giving them fire heat, it is quite early enough to have removed all the laterals. In your case we would prefer the spur system of pruning. The whole modes and rationale of pruning on either spur or rod system have lately been detailed by Messrs. Fish and Appleby. We do not see how it could be made simpler, but if you tell us your particular doubts we would try. Sanders' work on the Vine is very good, and so are many more. The Muscats you should encourage to grow, and then keep the house warm and dry to ripen the wood well in the autumn. Do not take a crop off even the strongest Vines at first; be satisfied with four or five moderate bunches from each at most. If the Muscats do well cut down to a foot or two, and take not more than a bunch or two next season if they give it.

The Pampas Grass will do for the situation; but why not have a bed for the Rhododendrons, and give the Pampas a knoll for itself.

People often vary in the description of a Rose, we do not know it—will some friend decide? But why not ask Mr. Rivers? That gentleman's practice as to unloosening buds is all right in general circumstances. Some buds are longer in swelling than others, and much depends on the time, the fitness of the stock, &c.; and simple though it seems, many persons never can bud successfully. Here, as in other matters, practice makes perfectness. Though moderately successful, we should not expect to rival a Rivers, nor a Paul, Francis, Lane, &c.

October will be a good month to move all the trees. If you could begin early in the month, or by the end of September, we should not trouble in giving the Arbor Vitæ any preparation now, as they generally lift with fairish balls; but if there is any difficulty in digging well round them, so as to trace the roots, it would be a good plan to dig as far as you could, and cut the large roots, and replace the soil, or rather leave the space open and cover on the top to keep out light and air; but in ordinary circumstances it is hardly worth the labour. If these trees need any pruning, it should be done now, and the young shoots will come before lifting-time.

The Rhododendrons were old under exposing the clay soil to

pulverise it, and then mix leaf mould with it at planting time: this will be better than burning it. Cover with a top dressing of rotten leaves. We have little hopes of the sea sand answering. If other sand cannot be had, burn part of clay.

The *Gazania* blooms last longer or shorter according to the weather. See what Mr. Beaton says about the hydrometric belt. *Splendens* keeps open without this artificial process longer than some others, and some varieties of it will be open on an evening when others are shut. Rather too many inquiries at once.]

MAGNOLIAS INJURED BY FROST.

I SHALL be much obliged if you can advise me what to do with two *Magnolias grandiflora ferruginea*. They are fine plants, about 30 years old, trained against the house and reaching to the second floor; the soil gravelly, and aspect west. They were, apparently, killed by the severe winter; but, within the last three weeks, several small sprouts have appeared on the stems, from about 6 inches to 4 feet from the ground. Should the trees be cut in, and if so, how close to the sprouts? Or is there anything else that could be done for them?—M. H.

[These *Magnolias*, and scores like them, with the hundreds of other kinds of trees which nearly perished by the frost, and are showing signs of life in July, only a few feet above the collar of the roots, should be cut down now at once to the very last ring, or inch of their stems, or the collar, as we call the part where the roots run from downwards, and the stem starts from upwards. That is the plan to cut half-dead and three-parts-dead too; but if this collar part is dead itself there is no chance, unless the roots are alive and are of those which make suckers or cuttings. So cut your *Magnolia* down to the collar, and if you get shoots keep three of them only, and only one after the first twelve months. The other two are to have two strings to your bow; for if two should die, as often happens in such cases after a few months' sucking, why you have one still to go on with. When your one or three shoots are 6 inches high mulch or "mould" over the old stem or stump, and let the shoots be 4 inches deep in this mulching and they will soon root into it, and that will enable you and them to cover the wall again in "half time," as the young wood will be fed by the conquered old roots, and by their own independent ones; this has a range from Caithness to Cornwall, and over 500 kinds of woody plants.]

AMERICAN BLIGHT.

IN reply to your correspondent "S.," in THE JOURNAL OF HORTICULTURE of July 9th, respecting the last winter's frost as to its effect upon the American blight, I beg to say the pest is as abundant as ever here, more especially upon my drooping Larches. Heretofore I had written to different parties for instructions as to a remedy; but the result has invariably been that no practicable method was known, that it was either too expensive, or that its application would be fatal to the patient. However, my patience, after trying very many prescriptions, gave way as I found the evil rapidly increasing, and I cut down a fine specimen of true drooping Larch 10 feet high, the branches extending in a circle 24 feet in diameter. As I supplied plants some years ago to many in the trade, to private parties, and also some to the Continent, it would be interesting and gratifying to hear that their trees are not thus infested.—WM. GOSBELL, Hereford Nursery.

HERBACEOUS PLANTS.

MR. APPLEBY's list of herbaceous plants will be hailed as a boon by all lovers of gardening in the present day. Now, if we could only get him in a humour, at his leisure, to pen a few articles on the subject of herbaceous gardening, he would confer a great benefit on the million, who only want an able advocate to set them going.

I can positively affirm that the only herbaceous garden I have seen of late, worth looking at, was that of a village blacksmith, a man living nearly one hundred miles from London. He could sweep away the snow and pick a bunch of Russian Violets in early spring, and a handful of good *Chrysanthemums* just before the winter frost. Not only so, but when the squire's gardener was at a loss for flowers, this sensible fellow had plenty.

Gardening might not be selfish, and nothing will remedy it.

me they are so ; for with a love of flowers, and the attention they require, so we find the moral love of the people is improved in any village where gardening is encouraged. Unfortunately, there are but a very few herbaceous nurserymen in the present day ; and, though I have got together a little lot of hardy herbaceous things, yet they have been gathered from a variety of sources, several from the small gardens of villagers.

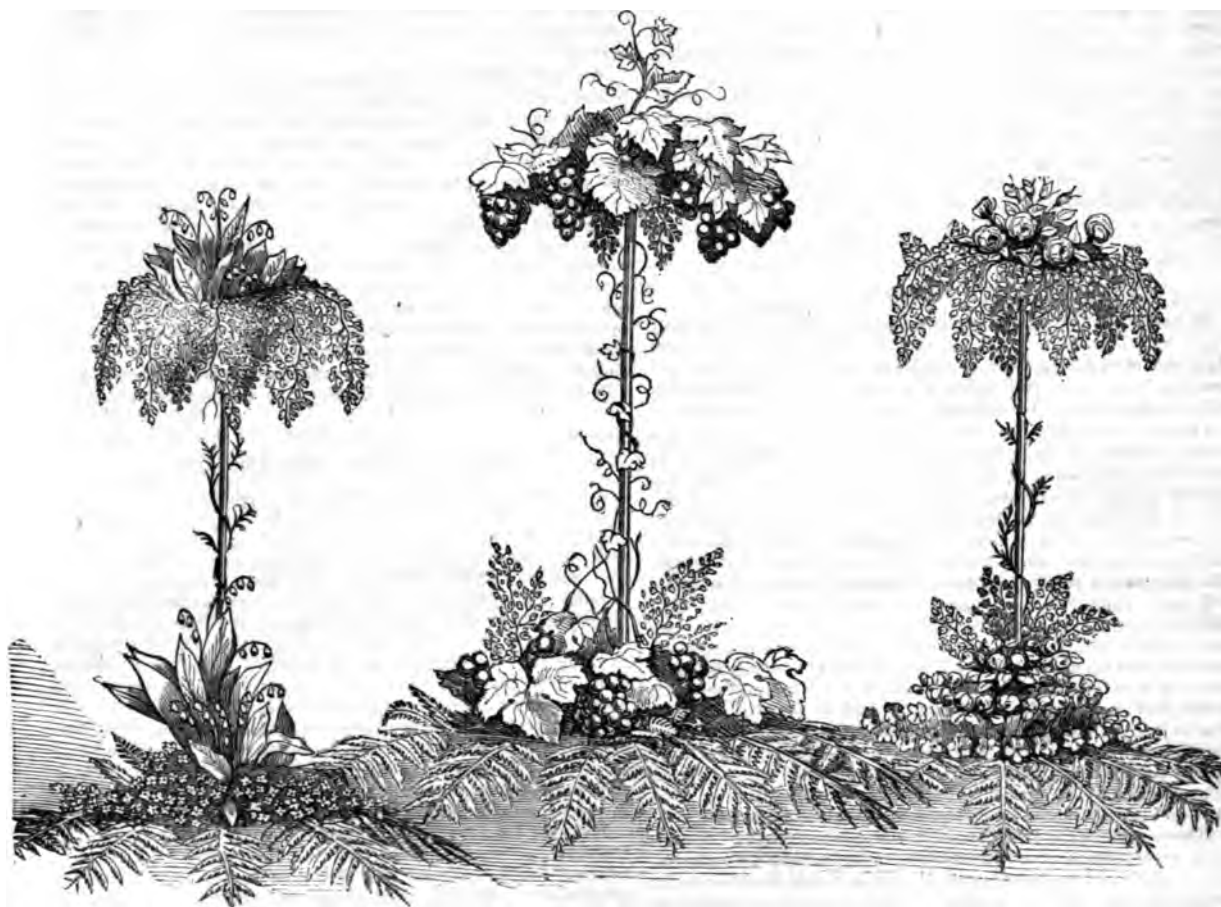
I believe, in truth, we really require a retrograde movement in gardening. The temptation to supply bedding stock by nurserymen, in suburban localities, is too strong to be resisted : few have places in which to keep such things, and, therefore, the stock has to be renewed every summer.

For myself, I generally bed out a thousand or two plants

of my own, and, therefore, have no selfish motive in urging a change ; I only pity those who keep no regular gardener, and have no such conveniences. I pity, particularly, the steady mechanic who delights in his garden, which is often the means of keeping him from the beer-house, where he would waste his substance and ruin himself, both soul and body. Nor is this all—I liken flower gardening in the present day to the man who gives a great feast once in a year, and lives upon bread and cheese for the remainder.

However, I cannot do better than leave this subject in the hands of the Editors, who, I am convinced, will be considerate enough not to forget the wants of the cottage gardener.—RUSTICUS.

MR. MARCH'S DESIGN FOR THE DECORATION OF THE DINNER TABLE.



At the great Exhibition of the Royal Horticultural Society which was held on the 5th of June last, Mr. C. Wentworth Dilke, with the view of improving the taste for dinner-table decoration, offered prizes for the best designs for the arrangement of flowers and fruits combined. The first prize, as we announced at the time, was awarded to Mr. March, of the Lord Chamberlain's Office, St. James' Palace, and it is with pleasure

that we are now enabled to furnish our readers with a representation of it.

We are informed that Messrs. Dobson & Pearce, of St. James' Street, have been entrusted by Mr. March to manufacture the set, which can also be used separately as ornaments for sitting-rooms in the country.

PAMPAS GRASS—BACHELOR'S BUTTON—DUKE OF ARGYLE'S TEA TREE.

A FRIEND has a large specimen of Pampas Grass, which for the last two years has grown to a great height, and been covered with spikes of blossom. Last winter it was nearly killed by the frost, and it was cut down to within a foot of the ground as far as it seemed dead. Since then the remainder has died

down, and at present resembles a large mass of closely compressed deal shavings, the same colour and tightly curled up. Meantime, round this mass (from 6 inches to 7 inches in diameter) has sprung up fresh Grass, now some 2 feet long, and one or two leaves have forced their way through the dead

mass. What should be done with reference to the latter to the plant?

What is the botanical name of the old plant popularly called Bachelor's Button?

What is the botanical name of a sort of weeping tree called the Tea tree found in old gardens? In one neighbourhood a very old farmhouse has the walls covered with it, and also it hangs freely over an old wall, with long stems pendent (like a Weeping Willow) the leaves very small, a dark blueish sort of green, the leaves thick and very small, and a little purple just coming out. I am no botanist, but it hangs something like a tree called the Salt tree, *Halimodendron argenteum*.—HARRIS.

[Nothing can be done to the Pampas better than to let it alone and have its own way. When acres and miles of it get burnt from the sun or from being set on fire in the Pampases of Brazil, they do nothing to the old stools and most of them recover.

The botanical name of the Bachelor's Button is *Ranunculus acris flore pleno*, and the single kind is much like the "Buttercups," *R. repens*, and *R. bulbosus*.

Tea tree. Did you never hear of the Duke's Tea tree? The Duke of Argyll was so great a favourite with us Scotch gardeners for his kindness to Jeannie Deans, and for getting pardon for her sister from the Queen at Richmond, that we sent him down one of the first Tea plants, and with it the fastest climber in England. At the unpacking they changed the tallies, and the climber was put against a south wall, and the Tea plant in a place where it soon perished. It was a long while before the mistake was discovered, and when it was the plant was *Lycium afrum*, or Duke of Argyll's Tea tree.]

FRUIT-ROOM.

If you or one of your correspondents will favour me in your paper with a good plan of a fruit-house for storing and keeping Apples, Pears, &c., on the ground-floor, showing the mode of heating, ventilating, and lighting, or such as be necessary, you will greatly oblige.—A CONSTANT READER AND SUBSCRIBER.

[Without we had a plan of your room it would be little use giving a plan for your fruit-room. The first essential when perfectness is aimed at is, equality of temperature, as when fruit require a higher temperature to bring them to perfection, a few can be removed and heated as wanted. To secure this equality of temperature, it is always an advantage to have the walls hollow, as confined air is one of the worst conductors of heat. We have seen a room made thus double by a casing of wood or lath and plaster 3 inches or 4 inches from the brick wall. What light is given should, if possible, be on the north side, as the fruit will keep sound longer in the dark. Unless the window goes up close to the ceiling, and the top part is made to move, it would be best not to depend on the window for ventilation, but small sliding ventilators should be inserted close to the ceiling and others near the ground-floor level. The top ventilators will be all that will require to be opened, unless for a short time when the fruit is sweating much after being housed, when both may be opened. When this sweating is over even the top ventilators will only require to be open in fine days.

This would be the best plan with the ground-room of a common house, but when a fruit-room is to be built in a shed form, the roof should face the north, the walls should be hollow, the windows flush with the outside one, and shutters padded ready to go against them inside in severe weather, and blinds to pull down when necessary. The ceiling of the room should either be double, with a foot between them, or a layer of straw 1 foot thick should lie over the ceiling. Suppose the room was 15 feet by 10 feet, there should be two or three openings in the ceiling—say 9 inches by 6 inches, for ventilation, and these communicating with lanterns in the roof with hipped boards to throw off the rain. The roof itself if slated should be close-boarded beneath, and, independently of the double ceiling, or the layer of straw to keep the temperature equal, the slates should be painted or coloured white. But for vermin making holes, the best roof would be reeds or wheat straw. By such means and close shutting when cold weather comes, it would be rare indeed that no frost would penetrate, and even then slightly covering the fruit with clean straw, would generally be better than using a stove or heating-apparatus of any kind. If a small stove is used the funnel should go through the roof, and a little air be given, put in general the fruit will keep better without it than when

have not tried it, would be surprised to find what a sharp frost a double wall would keep out, if the roof is also double. A few winters ago some gentlemen got betting as to the cause why snow some 4 inches thick lay on the sloping roof of a Mushroom-house, ranging inside from 50° to 60°, whilst in the same range the snow had fallen off the slates, when the highest heat in the sheds beneath barely averaged 36°. The Mushroom-house had a boarded roof for the slates to rest on, the rafters beneath were lathed and plastered in the same slope as the slates, and the space between the boards and the laths was filled with clean, dry straw, and all the heat we could give inside would scarcely affect the slates outside; and just on the same principle, however hot the sun be outside on the slates, it will scarcely affect the temperature inside, were the walls equally isolated. Such a Mushroom-house with ventilation in the roof would form a first-rate fruit-room. In arranging such a room no plan is better than to have platforms from 2 feet to 3 feet wide all round, and tier above tier—say three, four, or more, according to the height of the room. These platforms are better when sparred—that is, made of pieces of wood 1½ inch thick, and 2 inches to 2½ inches wide, with half-inch spaces between instead of being solid all through.

We have written on the supposition that there is to be one fruit-storehouse, and that Apples and Pears that require more heat to bring them to perfection may be brought as wanted to the kitchen or the parlour, and receive the higher temperature necessary to bring out their flavour. Where these conditions can be secured, there will be little or no need for any heating-apparatus—in fact, under careless management it would do vast more harm than good. In a thin-walled room, placing the fruit in boxes, or even covering with sweet straw or hay in severe weather, but removing it at once when the weather changed, and never using it again, would be better than using much artificial heat—in fact, where such conditions in a fruit-room as the above cannot be obtained, we would much prefer a dry cellar, or any other chamber underground, where the temperature is kept almost uniform. In such underground places fruit has kept well with but little trouble.—R.F.]

POMOLOGICAL CLEANINGS.

My early Orleans Plums set in the orchard-house, and now ripening out of doors, as suggested in Mr. Rivers' book, are delicious; and the trees with their beautiful green foliage, and now studded over with purple balls, have a most pleasing effect. The culture of fruit trees in pots, under glass, must be become very popular; it really is, to use your own expression, only in its infancy at present. Take, for instance, my Plum trees; why there is really more fruit on them than I have seen for years on as many standard Plum trees in Ireland. I am not, however, in favour of planting Peaches and Nectarines in the border, as it must be very difficult to keep them under proper control; but if a man wished to have a very magnificent tree (perhaps you might try it yourself) it would be worth while to build a handsome octagon-house, and then plant in the centre one tree, a showy free-bearing sort, and train it with mathematical precision in the pyramidal, and let it fill the house altogether.—J.M.

RIVERS' ECLIPSE STRAWBERRY.—This is a new variety introduced to the notice of the Fruit Committee of the Horticultural Society last year. It was then considered a variety of great merit for forcing, as it possesses what few other varieties do when forced—a rich pine flavour. Prince Arthur also possesses the same flavour when forced; but Eclipse so far exceeds that variety in size, it being generally of the largest. We have this season seen it growing out of doors, and we have found it a very abundant bearer, and one which may be safely relied upon for a general crop.

GARDENS FOR OUR SOLDIERS.

THE *Constitutionnel* publishes the following letter from the Camp of Chalons, showing the solicitude of the Emperor for the improvement of the condition of the common soldier:—

"At the close of winter the Emperor gave orders that a vegetable garden should be arranged behind the quarters of each regiment of infantry and cavalry, by means of which the soldiers might be supplied with additional comforts. For this purpose fourteen gardeners for each regiment, under the direction of a sergeant and a corporal, were sent to be seen in the month of

April last. Engineers traced out these gardens behind each tent or wooden hut. Each regiment was placed in possession of its ground, and the men immediately began to cultivate it. Wherever the spade was not strong enough to penetrate the ground engineers came to their assistance. On the orders having been first given to the corps of Engineers they sowed a great quantity of Cabbage seed, and the produce was distributed to each regiment in the shape of several thousand feet of Cabbage plants. Radish, Onion, Lettuce, Carrot, and Turnip seeds were sent from Paris to be distributed to each regiment. All these vegetables now present a magnificent appearance, and will serve this year to add to the soldiers' dinners. From 12,000 feet to 13,000 feet of Cabbage, and from 8000 feet to 9000 feet of Lettuce and Onions, are to be seen at this moment in the garden of each regiment. There are, likewise, a large quantity of Kidney Beans, which the soldiers may eat green. Next year, and the years following, the quantity and quality of the vegetables will be still better, inasmuch as the ground will have been better tilled and better manured. The soldiers of each regiment exhibit great *amour propre* in the cultivation of their gardens and in the superiority of their produce. The soldiers, moreover, derive great pleasure from walking through these gardens, which remind them of their paternal homes. In a word, the Emperor's idea is highly approved by the soldiers, and it is said to be the Emperor's intention to carry it out on a much larger scale."

[We wish our Government would follow the example thus set by the Emperor of the French, and attach gardens, not only to our camps, but to our barracks. The use of an increased amount of vegetable food, besides the employment for leisure hours afforded by such gardens, would promote both the physical and moral health of the soldiers.—Eds. J. of H.]

FUCHSIA SPORT—HARDY ORCHIDS.

IN a *Fuchsia* that I have, I have just noticed a flower that has only three sepals, three petals, and only six stamens. Can you tell me whether this is a common occurrence with flowers to do this?

Can you also name to me any nurseryman that sells hardy Orchids? as Mr. Appleby in his book does not name any.—
ARTHUR COLE.

[We are not aware that it is a common occurrence for a *Fuchsia* to assume the form you mention; but in this instance the rule is followed in regard to the structure of the flower—petals equal in number to the sepals, and the stamens double that number.

We cannot recommend nurserymen, but, as a rule, always consult those who advertise in our columns. You can always get anything you want from them.—Eds. J. of H.]

EFFECTS OF HELLEBORE POWDER ON THE GOOSEBERRY CATERPILLAR.

You may inform your correspondent that hellebore powder is a certain cure for the Gooseberry caterpillar; but it must be used rightly and in time. It should be applied as soon as the caterpillar is first perceived, and if the first application is not effectual it should be repeated again and again. Many gardeners neglect these two simple rules, and then they say that "hellebore powder does no good."

I was in a neighbourhood the other day where the Gooseberry trees generally were almost eaten up by the caterpillar; one garden I visited where scarcely a leaf remained. I asked the gardener if he had tried hellebore. "Oh, yes," said he; "but I might as well have left it alone." But I found on inquiry that he had not used it rightly. I then went to another garden not far distant, where I found the Gooseberry trees without any sign of caterpillar. The gardener told me that the plague was beginning, but that as soon as ever he saw it he applied hellebore powder, and that he repeated the dose. Here, where rightly used and in time, hellebore powder was effectual; and I have no doubt at all that when so used it will never fail.—EXPERTUS.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE July Meeting of the Entomological Society was very fully attended, it having been understood that this would have been

the last meeting in their apartments in Bedford Row. It appears, however, that the arrangements which had been nearly completed for the removal of the Society to fresh rooms in Gerard Street had failed; and that it was understood that some alterations would be made in the present apartments to render them more commodious, so as to obviate the necessity of removal. The chair was occupied by George R. Waterhouse, Esq., of the British Museum, Vice-President.

General Sir J. B. Hearsey (who, after more than fifty years' service of the most distinguished kind in India, has returned to England), exhibited a case of beautiful insects collected by himself in the neighbourhood of Darjeeling, including several species hitherto unique in our English collections. And Mr. Baly exhibited a fine series of Beetles belonging to the family Hispidæ, collected by Mr. Browning in China and the Philippine Islands.

Mr. F. Smith exhibited a specimen of the very curious parasite, allied to *Hippoboscæ*, which infests the hive bee, named *Braula coeca*. It had not been previously observed in this country, and the present specimen had been found upon an individual of the *Apis ligustica*, which latter had, however, been reared in this country. It had been taken by Mr. Woodbury near Exeter.

Specimens of *Ammæcius brevis*, a new British Beetle of the family Aphodiidæ, which had been taken in some profusion on the sands at Southport near Liverpool, were distributed among the members by the captor; who also exhibited specimens of the black variety of *Tillus elongatus*, which he thought might prove to be a distinct species having white patches at the sides of the elytra. It had been taken at Croydon.

Mr. MacLachlan exhibited specimens of both sexes of the remarkable aquatic Moth, *Acutropus niveus*, recently taken at Hampstead.

Mr. Desvignes read a paper containing descriptions of eleven new British species of Ichneumonidæ belonging to the genus *Bassus*.

Mr. Stevens exhibited a case of beautiful Lepidoptera collected by Mr. Trimen at the Cape of Good Hope, and announced the publication of a work on the Butterflies of South Africa by that gentleman. Mr. Stevens also exhibited specimens of a new British Weevil, *Nedyus crux*, taken by himself at Mickleham.

Mr. Stainton exhibited some Birch leaves from the neighbourhood of Scarborough infested by a remarkable mining larva; which, after consuming the parenchyma of the leaf, cuts out a circular case about one-tenth of an inch in diameter.

Captain Cox exhibited a number of drawings of the transformations of Lepidopterous insects, as well as the ravages of a Dipterous larva on the middle shoots of Wheat plants; which, however, instead of being destroyed thereby, threw out a number of side shoots, so that the crop was not materially injured by the attacks of the insect. Professor Westwood stated that this larva was doubtless the young state of *Chlorops temopis*, or *Musca pumilionis*, well known for the habits of its larva infesting Wheat; and General Hearsey stated that it is the custom for the native Indians on the Punjab to mow off the first shoots of their corn crops in order to increase the growth of the plants.

Mr. Stainton exhibited some galls found upon *Silene nutans* produced by an insect. And Mr. Robinson exhibited drawings of various exotic Coleoptera collected by Mr. Wollaston.

Captain Cox made some remarks on the great rarity of insects this season, owing either to the cold of the last winter or the extreme moisture of the last season. He also suggested the advisability of planting certain species of wild plants in gardens, in order to attract the different species of insects which frequent them.

Mr. MacLachlan read some remarks, in which he contended that the suggestion that many of the recently established species of Lepidoptera, especially among the small species, were only varieties resulting from a variation of food of the larva was untenable, and that there was very great difficulty in determining the question owing to the minuteness of the individuals. Professor Westwood having been appealed to as supporting the contrary opinion, stated that he had hoped that he had endeavoured to guard himself from misapprehension in previous observations upon this subject. He had indeed stated his opinion that many of these so-called new species were merely varieties, and he had in vain looked for any structural characters, either in the larva or perfect insect, set forth in their descriptions to warrant their establishment. A slight variation in the colour of

the larva, or a difference in the form of the burrow in the leaf in which they reside, or in that of the case which they make and carry about as their abode (on which many of these species mainly rested), were, he considered, all due to the difference of the plants on which the insects fed. He had, however, no positive proof of such a fact, and therefore had never asserted it as such. But analogy bore out this view; and Mr. MacLachlan had forgotten that the largest species of Butterflies and Moths—namely, the giant Ornithopteri and the great Silk Moths of the East, afforded instances of modification of species, which ought to have great weight in determining the question. He considered it certain that the *Ailanthus* Silk Moth, now cultivated in France, was only a variety of the *B. Cynthia*, which had become modified by its food; and General Hearsey stated that it was well known that the Tussen and Arrindy Silkworms of India produced very different kinds of silk when fed upon different plants. Mr. Bates had also proved that variation in species occurred in Butterflies in comparatively small geographical ranges, which Mr. Westwood considered might be due to other considerations, as it was well known that in Africa species remained permanent over an exceedingly wide range. Experiments were required to settle this question as regarded the British Microlepidoptera.—W.

THE NEIGHBOURHOOD OF RIO DE JANEIRO.

AFTER three days' travelling we arrived at Socógo, the estate of Senhor Manuel Figuereda, a relation of one of our party. The house was simple, and, though like a barn in form, was well suited to the climate. In the sitting-room gilded chairs and sofas were oddly contrasted with the whitewashed walls, thatched roof, and windows without glass. The house, together with the granaries, the stables, and workshops for the blacks, who had been taught various trades, formed a rude kind of quadrangle; in the centre of which a large pile of coffee was drying. These buildings stand on a little hill, overlooking the cultivated ground, and surrounded on every side by a wall of dark green luxuriant forest. The chief produce of this part of the country is coffee. Each tree is supposed to yield annually, on an average, 2 lbs.; but some give as much as 8 lbs. *Mandioca* or cassada is likewise cultivated in great quantity. Every part of this plant is useful: the leaves and stalks are eaten by the horses, and the roots are ground into a pulp, which, when pressed dry and baked, form the farinha, the principal article of sustenance in the Brazils. It is a curious, though a well-known fact, that the juice of this most nutritious plant is highly poisonous. A few years ago a cow died at this Fazenda, in consequence of having drunk some of it. Senhor Figuereda told me that he had planted, the year before, one bag of Feijão or Beans, and three of Rice; the former of which produced eighty, and the latter three hundred and twenty fold. The pasturage supports a fine stock of cattle, and the woods are so full of game, that a deer had been killed on each of the three previous days. This profusion of food showed itself at dinner, where, if the tables did not groan, the guests surely did; for each person is expected to eat of every dish. One day, having, as I thought, nicely calculated so that nothing should go away untasted, to my utter dismay a roast turkey and pig appeared in all their substantial reality. During the meals, it was the employment of a man to drive out of the room sundry old hounds, and dozens of little black children, which crawled in together, at every opportunity. As long as the idea of slavery could be banished, there was something exceedingly fascinating in this simple and patriarchal style of living: it was such a perfect retirement and independence from the rest of the world. As soon as any stranger is seen arriving, a large bell is set tolling, and generally some small cannon are fired. The event is thus announced to the rocks and woods, but to nothing else. One morning I walked out an hour before daylight to admire the solemn stillness of the scene; at last, the silence was broken by the morning hymn, raised on high by the whole body of the blacks; and in this manner their daily work is generally begun. On such fazendas as these, I have no doubt, the slaves pass happy and contented lives. On Saturday and Sunday they work for themselves, and in this fertile climate the labour of two days is sufficient to support a man and his family for the whole week.

The greater number of trees, although so lofty, are not more than 5 feet or 4 feet in circumference. There are, of course, a few more, after dimensions, and the small ones are the

making a canoe 70 feet in length from a solid trunk, which had originally been 110 feet long, and of great thickness. The contrast of Palm trees, growing amidst the common branching kinds, never fails to give the scene an intertropical character. Here the woods were ornamented by the Cabbage Palm—one of the most beautiful of its family. With a stem so narrow that it might be clasped with the two hands, it waves its elegant head at the height of 40 feet or 50 feet above the ground. The woody creepers themselves, covered by other creepers, were of great thickness: some of which I measured were 2 feet in circumference. Many of the older trees presented a very curious appearance from the tresses of a Liana hanging from their boughs, and resembling bundles of hay. If the eye was turned from the world of foliage above to the ground beneath, it was attracted by the extreme elegance of the leaves of the Ferns and Mimosa. The latter, in some parts, covered the surface with a brushwood only a few inches high. In walking across these thick beds of Mimosa, a broad track was marked by the change of shade, produced by the drooping of their sensitive petioles. It is easy to specify the individual objects of admiration in these grand scenes; but it is not possible to give an adequate idea of the higher feelings of wonder, astonishment, and devotion, which fill and elevate the mind.

After the hotter days, it was delicious to sit quietly in the garden and watch the evening pass into night. Nature, in these climes, chooses her vocalists from more humble performers than in Europe. A small frog, of the genus *Hyla*, sits on a blade of grass, about an inch above the surface of the water, and sends forth a pleasing chirp; when several are together they sing in harmony on different notes. I had some difficulty in catching a specimen of this frog. The genus *Hyla* has its toes terminated by small suckers; and I found this animal could crawl up a pane of glass, when placed absolutely perpendicular. Various cicadas and crickets, at the same time, keep up a ceaseless shrill cry, but which, softened by the distance, is not unpleasant. Every evening after dark this great concert commenced; and often have I sat listening to it, until my attention has been drawn away by some curious passing insect.

At these times the fireflies are seen flitting about from hedge to hedge. On a dark night the light can be seen at about 200 paces distant. It is remarkable that in all the different kinds of glow-worms, shining elaters, and various marine animals (such as the crustacea, medusæ, nereidæ, a coralline of the genus *Clytia*, and *Pyrosoma*), which I have observed, the light has been of a well-marked green colour. All the fireflies, which I caught here, belonged to the *Lampyrinæ* (in which family the English glow-worm is included), and the greater number of specimens were of *Lampyrus occidentalis*.* I found that this insect emitted the most brilliant flashes when irritated: in the intervals the abdominal rings were obscured. The flash was almost co-instantaneous in the two rings, but it was just perceptible first in the anterior one. The shining matter was fluid and very adhesive; little spots, where the skin had been torn, continued bright with a slight scintillation, whilst the uninjured parts were obscured. When the insect was decapitated the rings remained uninterruptedly bright, but not so brilliant as before; local irritation with a needle always increased the vividness of the light. The rings in one instance retained their luminous property nearly twenty-four hours after the death of the insect. From these facts it would appear probable, that the animal has only the power of concealing or extinguishing the light for short intervals, and that at other times the display is involuntary. On the muddy and wet-gravel walks I found the larvæ of this *Lampyrus* in great numbers: they resembled in general form the female of the English glow-worm. These larvæ possessed but feeble luminous powers; very differently from their parents, on the slightest touch they feigned death, and ceased to shine; nor did irritation excite any fresh display. I kept several of them alive for some time; their tails are very singular organs, for they act by a well-fitted contrivance as suckers or organs of attachment, and likewise as reservoirs for saliva, or some such fluid. I repeatedly fed them on raw meat, and I invariably observed, that every now and then the extremity of the tail was applied to the mouth, and a drop of fluid exuded on the meat, which was then in the act of being consumed. The tail, notwithstanding so much practice, does not seem to be able to find its way to the mouth, at least the neck was always touched first, and apparently as a guide.—(*Darwin's Journal during the Voyage of the "Beagle."*)

* I am greatly indebted to Mr. Waterhouse for his kindness in naming for me this and many other insects and in giving me most valuable suggestions.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE occurrence of genial showery weather will have brought the recently trenched ground into good condition for planting out the latest crops of Cauliflowers, Broccoli, and winter Greens, which should be proceeded with without delay. *Asparagus*, keep the weeds down in the beds, for which purpose occasional sprinklings of salt are good, as they check the growth of weeds in their infancy, and are of benefit to the plants. See that they are properly supported, as the crowns are sometimes seriously injured by the stems being blown down. *Cabbage*, make a sowing of East Ham for early spring use, and the last sowing of Coleworts. *Capsicums*, the plants to be kept watered during dry weather; if a little litter be laid around them they will not require it so often. *Carrots*, thin the late-sown crops, and loosen the earth between them where they have been sown in drills. *Celery*, pay strict attention to the early crop, let it be gone over with the hand, and all the offsets taken off, and let it have a thorough drenching with dung water, after which, on the following day, give it a slight earthing up to prevent evaporation. *Cucumbers*, as the plants on the ridges spread, cover the soil with short grass: this will keep the earth moist and the fruit clean. *Dwarf Kidney Beans*, a last sowing should now be made in a sheltered situation. The drills to be watered if the soil is very dry. *Endive*, transplant a few more, and make another sowing. *Tomatoes*, the shoots to be thinned, and those left to be kept closely nailed to the wall; they should also be frequently watered and mulched.

FLOWER GARDEN.

Attend to the wants of the growing plants by giving them their proper supports and training at this season. The propagation of stock for another year will require immediate attention. The cuttings of *Pelargoniums* for bedding purposes will, in ordinary seasons, strike freely in beds of light garden soil in any out-of-doors situation exposed to the sun; but where there are frames they should be preferred to protect the cuttings from very heavy showers of rain. Herbaceous plants and hardy bulbs now in full beauty to be kept in order by tying up loose growths and keeping the ground free from weeds. *Ranunculus* roots to be taken up forthwith, and dried in the shade; if allowed to remain in the ground they generally strike fresh roots after the first heavy rains. Plant out rooted Pink pipings on well-prepared beds. Examine them occasionally to set them properly if they are uprooted by worms. *Dahlias* will require an abundance of water. Thin out the shoots if too thickly together. Advantage to be taken of showery weather to prick out the spring sowings of Wallflowers, Sweet Williams, Canterbury Bells, and other such biennials into nursery-beds. Continue to propagate *Antirrhinums*, *Pentstemons*, *Phloxes*, &c., by cuttings; they take root readily under the shade of a north wall covered with hand-lights.

FRUIT GARDEN.

Prepare the ground intended for new plantations of Strawberries by very deep trenching, and afterwards by a dressing of half-decomposed manure, and fork it in. Old worn-out beds had better be trenched up, and the crop changed. Keep the runners well removed from the permanent beds. Applications of liquid manure and soot will be beneficial at this season. Thin out the shoots of Figs, and keep them well nailed in. Out-door Grapes are late, and will require every attention in stopping and training the shoots as open as possible to give them the benefit of sun and air.

GREENHOUSE AND CONSERVATORY.

Camellias, whenever the young wood appears getting ripe, may be removed to the open air; they thrive best in a situation shaded from the midday sun, and sheltered from high winds; to be careful to place them on a cinder or slate bottom, to prevent worms from getting into the pots. Chinese Azaleas, if equally forward in their growth and have formed their next year's flower-buds, may likewise be turned out; but, unlike the Camellias, they require full exposure to the sun and air, and to be placed in an open situation that the wood may become thoroughly ripened. It may, however, be necessary to place them for a week or two in a partially-shaded situation to harden their foliage sufficiently to bear the full force of the sun, as the sudden change from a house to bright sunshine might cause the leaves to turn brown. *Cinerarias*, whether seedlings or suckers, should have regular attention; those intended for winter work should be potted forward without delay. On the evenings of hot, dry

days give the plants a good sprinkling, and also where the plants are standing. *Pimelea spectabilis* and other kinds which have done blooming to have their branches liberally shortened in, and to be set in a cool shady place to break, as also the different kinds of *Polygala*. *Aotus gracilis* to be cut down close to the pot, and *Leschenaultias* which are getting shabby to have all their flowers and flower-buds removed, and to be placed in a cool place to start again; care to be taken that they are clear of insects, and to sprinkle them overhead once or twice a-day in warm weather. W. KEANE.

DOINGS OF THE LAST WEEK.

STILL enough of showers, and sun, and warmth, to give one the hay fever, and, tantalising it is just when a piece is turned over and a very little more sun would make it fit for carrying, to see it deluged before one's eyes, and men and maidens forced to scamper to the nearest place for shelter. But how the Turnips do grow! The dreaded fly has been almost a stranger in this quarter this season, and from what little we have seen of Wheat and other grains, there seems to be a fine promise of a glorious harvest if the weather will only be propitious, and a kind Providence will bless the husbandman's toil. Ah! the blessing might oftener come, did we not in our self-sufficiency and pride so often forget our dependence on that blessing. Mangolds, notwithstanding all the grumblings about bad and old seed will be better than was expected, and the ground will not be lost with those that kept their eyes about them, even when there was a partial failure, as there was plenty of time to fill up with dibbled Swedes, Cow Cabbages, or even Savoyas, and the latter if perfected early, housed or pitted, dry, make no bad food in winter either for two-footed man, or four-footed ox or cow.

There is hardly anything more perplexing than this question of good seeds. In such seasons as the last, all that the most honourable, conscientious seedsmen could do, was to do their best; and if some things did not come so well as others, what is the use of railing at a class of honourable men instead of making allowance for the season, or finding fault with ourselves? Ever since Adam ate the Apple, and then tried to throw the blame on mother Eve, there has been growing and increasing amongst us a most unmanly, degrading practice, of trying to throw the responsibility of all failures on other shoulders than our own. Perhaps from following so closely the occupation of the first horticulturist, and thus from handling the soil becoming more than others, "of the earth, earthy," may be the reason why, as a class, and in advance of men of other arts, we have made such proficiency in the sciences of grumbling and recrimination. Only let us proceed a little farther, and the public will pay as little attention to our complaints as was given to the howl of the mendacious boy when the wolf actually did come. This failing shows itself in myriads of forms, but the seed question is its favourite field of action. What Atlas shoulders these seedsmen must have to carry the huge weight of failures heaped upon them, and thrive well under it all! Rogues, no doubt, there are in all trades, and people, if they expect goods for next to nothing, must expect to pay dear for their cheap articles; but a man who has a character to lose, is just as anxious to sell a good article as the customer is to buy one. I do not set myself up as a purist in these matters, no doubt I have my hoot of the doleful at times, but I do think it is more manly to find other apologies for failures—nay, honourably to lay them on our own backs at times, instead of indulging in this childish recrimination on others.

I have personally seen little this season—so little that I might have stood as a pattern housewife in the estimation of a cynical critic, who considers that the mistress of a house should resemble the snail, which goes no farther from home than she can carry her shell-house on her back; but even in the quietness of this retreat what tales and mishaps have reached me of such shocking seeds and such cheats of seedsmen!!! Well, I had a hoot about one or two kinds of Peas, and repeated trials proved that the failure was not all my fault; but on the whole I have never found seeds better than this season. Onions, Carrots, Parsnips, Peas in general, French Beans in particular, Greens and Lettuces, coming up as thick if not thicker than usual. Of flower seeds I may say the same thing; and as I know that some folk who could not get a seed up had their seeds from the same firm, or from others equally determined to supply a first-rate article, I could do no other than come to the conclusion

that something was at fault besides the real character of the seeds—in fact, my impression is that in a great majority of such cases the seeds were either starved, buried, or eaten up by birds and other vermin.

I may mention a few facts illustrative of the latter idea. There are few seeds more hardy than Prince's Feather and Loves-bleeding. All they require is a fine pulverised soil and very shallow covering. For years we never had any trouble with them but pulling out ten times more than what were left to grow to a good size; and with all our new things hardly anything makes more striking lines or rows. But at length the birds took to them and no mistake. Branches and nets were put over them, but still by hook and by crook they would be at them; and once they got in they would clear out a row—more, seemingly, for mischief than for any love of eating: and the care required was so incessant just as the little things came through the soil and even afterwards, that we have been forced to sow such seeds under the protection of an old sash or a calico-frame, and plant out what we want. This season also we sowed in the very best style some lines round the outside of beds of *Nemophila*, *Saponaria*, *Sanvitalia procumbens*, &c., and we got scarcely a plant. Seeds from the same packet sown exactly in the same way, but under protection, so that neither slugs, nor snails, nor birds could get at them, came thick enough, and were used to make edgings where the sowing out of doors had failed. Some three weeks ago we sowed with our own hands some Lettuces, Endive, &c., on a fruit-tree border, having no other patch of ground at liberty. We have long learned that to sow such things, or any of the Brassica tribe, and leave them uncovered by net, &c., was just as wise a thing as waiting by the side of a river until the waters had all passed by. A net was ordered to be placed over the border. The man ran it up both sides, elevated it in the centre against the trees, and left a large space open there, just as much as telling the birds they might enter freely. Hardly a Lettuce has come. Endive has come moderately, for don't the birds know the difference as well as we do? When the matter was pointed out the man said it could not be the fault of the net not being rightly placed, for the seeds never came up, and therefore the seeds must have been bad! We should certainly have been surprised to get plants after the birds had feasted on the seeds to their hearts' content. In many such cases seedsmen are blamed every day, when the fault ought to be placed against our own want of careful watchful attention.

Watered Cauliflowers, Peas, Beans, &c., with manure water to make them large, crisp, and succulent, and to prolong the flowering and bearing of the former. If close-gathered and but few pods allowed to become large, many kinds are almost continuous bearers. In some of the larger Marrowfats, if a few pods get too hard for use, they should be pulled off and laid in an airy place to dry and mature for seed. By removing all such and manure waterings, amateurs and cottagers with little room may almost have continuous gathering from all the larger Marrowfats, as *Jeyes' Conqueror*, *British Queen*, *Knight's Tall Marrow*, &c.

Watered also Lettuces rather more than half grown with manure water, that they might not only heart well, but cut short and crisp. This they will hardly be if the ground about the roots is dry. To keep them longer and as moist as necessary with little trouble, we prefer growing them on the north side of raised banks, and the north side of fences at the end of June and during July and August. I was glad to find our prejudice as respects Lettuce thoroughly dispelled. I found it was always grumbled about if a Cabbage Lettuce was taken in for raw salad; but being a little scarce of full-grown Cos, we got some fine heads of *Marseilles Cabbage* used to eke out the quantity required, and there has been no end of praises of the Lettuces. I have tried the *Marseilles* myself, and find it very crisp and sweet, though almost as large as a Cabbage, and I really think preferable to Cabbage Lettuces much more run after, as *Victoria*, *Versailles*, &c.; they when mature being softer, and, perhaps, on that account better for stewing. After all a good constant supply of Lettuces, so delicious in warm weather, is only to be obtained by frequent sowings—say making a sowing from May 10 September, whenever the previous sowing gets above the ground for an inch or so. Part of that allowed to stand where sown, and part transplanted, gives a nice succession. A great breadth of Lettuces, unless in some wonderfully large establishment, is just a great breadth of waste. The great thing is just to have enough to meet the demand, and little more and plenty of manure water.

wroth because he was grumbled at for not having a nice blanched, crisp Lettuce for salad, though previously he had whole quarters of Lettuce, four parts out of five of which were rendered useless because they could not be used fast enough. He thoroughly tired them with Lettuce, and then they complained when they wanted them again. This young friend will be wiser for the future, or I will use my bet—a farthing's worth of treacle.

As the result of some experience, I would add two or three golden rules to that of the late Walter Dickson, of Edinburgh, which I have been assured was, Sow thick, thin quick, and keep friends with the cook. This for the first; the second would be, Never let the cook or housekeeper know if you are scarce of any one thing. Philosophers might make a volume on the subject; for me it is quite sufficient, that whatever is scarce becomes from that moment endowed with a peculiar charm, and is sure to be asked for because it was scarce. I could fill a volume with anecdotes confirmatory of this fact. The second rule is, Strive to have plenty of everything; and the third and the most important is, Never let any part of the establishment be glutted and tired of any one thing. "Sent this or that until they were thoroughly tired of it," is not the mode to supply kitchen stuff, fruit, or anything else. If you have extra abundance of any one thing, it is better to give part to the garden labourers than to let any part of the establishment get tired of it. Even the servants' hall should have its changes of vegetables when they are plentiful in summer. The Cauliflower is king of flowers, according to Dr. Johnson, but it would cease to be attractive when presented day after day—the sight at last would become repulsive; but with two or three changes between, how nice and pleasant it would be.

No gardener, however high his position, ought to be above looking after the vegetables that go to all parts of the establishment. The person that supplies the house is very apt to take the same things day after day if not jogged up a bit. Not long ago a friend of ours, when his mind was labouring under a complication of domestic trials and afflictions, found that his good man Friday had taken nothing but Potatoes, though Cabbages, Cauliflowers, Peas, Beans, Dwarf Kidney Beans, and Scarlet Runners were going to waste for want of gathering. Study, then, to give variety, and never allow a good thing to become distasteful by giving a surfeit of it.

We must pass the fruit garden with saying that the same process of stopping and training was proceeded with, and that Melons swelling were elevated on bricks to keep them from the moisture of the bed; and later ones showing bloom were set, and later ones still trained and pegged out.

Much time and trouble have been taken up with the flower-beds. Many of our friends merely plant, and leave them to themselves. I find all under my care becomes unsatisfactory unless there is careful training, pegging, and branching, and the plants are not only secured against wind, but great attention is paid to the relative heights in groups and in single beds filled with various things. Beds that receive nothing of this attention may look tolerable from a distance, but whenever you come near them you can see at once that they are destitute of all artistic skill, and, therefore, so far unsatisfactory. The beds and groups, it is true, should appear to be growing naturally, and yet design and skill should be apparent, or we might be satisfied with groups on the roadside, the hedgerow, and the wood glade, instead of giving ourselves so much bother in the garden. Where such attention cannot be given we would advise curtailing the number of flower-beds, that more time may be given to those left. I would sooner see one bed well managed than a dozen showing signs of slovenliness; and I would wish it to be thoroughly recognised as another golden rule—that the amateur or the cottager that can show a single bed better than any one amongst the hundreds at Shrublands or Trentham, just shows so much the more better taste and better gardening. This seems a hard matter to believe by some who have very little places, and the genius of envy seems to possess them when they see a fine large place; but it is the true point of contrast notwithstanding, and if kept in view many would return from visiting gardens on good terms with themselves and everybody else, instead of letting it be seen that they could not be superior to envying those who had more wealth and more land than themselves.

A friend has thanked us for the hint of insisting on the workmen having boards for their feet in regulating flower-beds, but says his Box edging gets injured nevertheless, and if the edgings are covered of grass paths the men destroy the symmetry of the beds. I have heard and now if the grass is at all damp. To

G. W. Moss. Highly Commended, W. Gomersall; R. Swift; R. Baines. *Single Cock*.—First, G. W. Moss. Second, T. Yondan. Third, R. Hemingway. Fourth, S. Matthew. Highly Commended, G. Kidger; J. Bradwell; E. Archer; R. Woods; R. Swift; W. F. Dixon, Junr.; H. Adams.

MALAYA.—First, C. Ballance. Second, J. Dixon.

COCHIN-CHINA (Cinnamon and Buff).—First and Second, T. Stretch. Third, H. Tomlinson. Highly Commended, Miss V. W. Musgrove. *Chickens*.—First, T. Stretch. Second, Miss V. W. Musgrove. Highly Commended, Capt. Heaton; E. Smith; Mrs. A. Watkin. Commended, H. Tomlinson.

COCHIN-CHINA (Brown and Partridge-feathered).—First and Second, T. Stretch. Third, J. Bolton. *Chickens*.—First, Miss V. W. Musgrove. Second, E. Tudman. Highly Commended, W. S. Parker. Commended, J. K. Fowler; H. Tomlinson.

COCHIN-CHINA (White or Black).—First, R. Chase. Second, W. Dawson. Third, R. Titterton. *Chickens*.—First, C. R. Titterton. Second, R. Chase. Highly Commended, A. E. Smith; W. Dawson.

COCHIN CHINA (Single Cock of any colour).—First, C. Moor. Second, T. Stretch. Commended, M. L. Fearnside; W. Dawson.

BRABMA POOTRA (Light or Dark).—First and Second, R. Teebay. Third, Rev. J. R. Blakiston. *Chickens*.—First, J. H. Craigie. Second, Rev. J. R. Blakiston. Highly Commended, J. K. Fowler. *Cock*.—First, J. H. Craigie. Second, Miss S. A. Harvey.

HAMBURG (Golden-pencilled).—First, W. Froggatt. Second, S. Smith. Third, I. R. Robinson. Commended, F. Hardy. *Chickens*.—First, T. and C. Parkinson. Second, Carter & Vallant. Highly Commended, J. Dixon; C. H. Wakefield.

HAMBURG (Golden-spangled).—First, J. H. Hyde. Second, W. R. Lane. Third, J. Dixon. Highly Commended, G. Brooke. Commended, Miss E. Beldon. *Chickens*.—First, S. H. Hyde. Second, H. Carter. Highly Commended, J. Dixon; M. H. Broadhead; G. Brooke.

HAMBURG (Gold or Silver-spangled).—*Single Cock*.—First, J. Dawson. Second, H. W. B. Berwick. Commended, Mrs. Sharp.

HAMBURG (Silver-pencilled).—First, W. Wood. Second, A. Nicholson. Third, T. Keable. Commended, J. Martin. *Chickens*.—First, T. Barber. Second, T. Keable. Highly Commended, J. Martin; H. Marshall.

HAMBURG (Silver-spangled).—First, J. Dixon. Second, R. Teebay. Third, H. Carter. Highly Commended, J. Firth. *Chickens*.—First, J. Robinson. Second, J. Dixon. Highly Commended, Miss E. Beldon; H. Carter; Mrs. H. Sharp.

HAMBURG COCK (Gold or Silver-pencilled).—First, W. Holmshaw. Second, J. Robinson. Highly Commended, J. Martin.

POLANDS (Black, with White Crests).—First, J. Dixon. Second, G. Ray. Third, T. Baitye.

POLANDS (Gold or Silver).—First and Second, J. Dixon. Highly Commended, H. W. Boyle.

POLAND COCK (any colour).—First, J. Dixon. Second, withheld.

REDCAPS.—First, J. Hollins. Second, Mrs. S. Harrop. Third, Mrs. R. Birks. ANY OTHER DISTINCT BREED.—First, Lady L. Thynne. Second, Miss E. Beldon. Third, W. Dawson.

BANTAMS (Golden-laced).—First, F. Wragg. Second, J. Dixon.

BANTAMS (Silver-laced).—First, E. Yeardeley. Second, T. H. D. Bayley. Highly Commended, Miss S. A. Harvey.

BANTAMS (Black).—First and Second, J. W. George.

BANTAMS (White).—First, D. La. born, Junr. Second, T. H. D. Bayley.

BANTAMS (Game).—First, R. W. Boyle. Second, M. Turner. Third, J. Camm. Highly Commended, J. Camm. *Single Cock*.—First, T. H. D. Bayley. Second, J. Camm. Highly Commended, R. Moon, Junr.

GEESK.—First, Mrs. E. Appleyard. Second, J. K. Fowler. Highly Commended, J. Dixon (Toulouse); Marchioness of Winchester (Grey Toulouse); Marchioness of Winchester (White Embden).

DUCKS (White Aylesbury).—First, Second and Third, J. K. Fowler. Highly Commended, J. K. Fowler; J. Middlehurst, Junr.

DUCKS (Rouen).—First, J. Holme. Second, Marchioness of Winchester.

DUCKS (Black East Indian).—First, C. Ballance. Second, F. W. Earle. Third, Rev. J. R. Blakiston. Highly Commended, G. S. Sainsbury; Rev. J. R. Blakiston.

DUCKS (Any other Variety).—First, J. Dixon (Grey Call). Second and Third, Miss S. Hellewell.

TURKEYS.—First, J. Dixon. Second, Marchioness of Winchester (Cambridge). Highly Commended, J. Smith (Cambridge). Commended, Capt. W. Hornby.

SWEEPSTAKES.

GAME COCKS.—First, Capt. W. Hornby. Second, G. W. Moss. Third, E. Archer.

GAME COCKERELS.—First, Capt. W. Hornby. Second, J. Staley.

GAME BANTAM COCKS.—Miss V. W. Musgrove.

PIGEONS.

The Show of Pigeons amounted to nearly one hundred pens,

being a very much larger number than have ever been exhibited

at this Show previously. The character of the birds was also

much higher than in former years, the winners in most of the

classes being first-rate specimens of the respective breeds.

The Carriers and Pouters were shown singly. The first prize

for *Carrier* cocks was taken by Mr. Rake with a very fine black,

emarkable for its length of neck and general carriage. There

were eleven entries, and the class, as a whole, was an exceedingly

good one. In *Pouters* the competition, especially among the

cocks, was severe. Mr. Rake won the first prize with a very

long-limbed black cock that had never been exhibited previously;

this bird taking the prize over his well-known blue cock that

has been so very successful. In *Pouter* hens, Mr. Rake was

also the winner of the first prize; the second going to Mr.

Smith for a very young red hen of great promise. In *Short*

and *Tumblers*, the prizes were awarded to Almonds.

Pumpeters, Mr. Oakes was the first with a pair of Whites.

A very unusual merle in *Pouter* was the show bird; and it

was the only one of the kind seen at the show.

At the show, Mr. Rake's *Carrier* cock was the best of the

class, and the pair of *Red Jacobins* of the same

exhibitor were more beautiful in colour than any we have seen

for some time. In *Owls* there were two pair of the very small

North African White variety shown. The first prize was awarded

to one of these pair, and the second to a very good pair of Blues.

In the "distinct variety" classes there was a good show. The

first prize was awarded to a good pair of *Hyacinths*, that were

absurdly entered as *Bronze-wings*, which is a name that should

be retained for the Australian species. But the most interesting

pen in the class was that which contained a pair of the Australian

ground Pigeon, the Wongo Wongo of the colonists. It is to

be regretted that there are no prizes offered to distinct species,

for it is obvious that where prizes are only offered to a new or

distinct variety of the domestic Pigeon, the *Columba livia*, a

Judge has no right to award them to any foreign Dove that is

a totally distinct species of animal. The pen is question was

the first we have ever seen exhibited at a Poultry Show, and it

would be interesting to know if they have ever bred in confinement.

They were the property of Mr. A. G. Brooke, and were

highly commended by the Judge.

We were glad to see so good a Show of Pigeons at so late a

period of the year; but the prize list being good and liberal

called forth numerous entries.

CARRIERS.—*Cock*.—First, M. Rake. Second, J. Pearson, Junr. Third, G.

Robson. Highly Commended, Mr. Yardley. Commended, Mr. Deakin and

Mr. Wood. *Hens*.—First, G. Robson. Second, H. Child, Junr. Third,

R. J. Wood. Highly Commended, Mr. Deakin.

POUTERS.—*Cock*.—First and Second, M. Rake. Third, J. Smith.

Highly Commended, Mr. Brown and J. Smith. Commended, Mr. Deakin.

Hens.—First and Third, M. Rake. Second, J. Smith.

SHORT-FACED TUMBLERS.—First and Second, M. Rake. Commended,

Marchioness of Winchester and H. Child.

RUNTS.—First, F. Key. Second, H. Child, Junr.

FANTAILS.—First, F. Key. Second, H. Child, Junr. Commended, Mar-

chioness of Winchester.

JACOBINS.—First, T. T. Parker. Second, H. Morris. Highly Com-

mented, W. H. Oates.

TRUMPETERS.—First, W. H. C. Oates. Second, J. C. Brierley. Highly

Commended, Mr. Key and Mr. Yardley. Commended, Mr. George.

BABES.—First and Second, M. Rake. Highly Commended, Mr. Craigie.

Commended, T. T. Parker and Mr. Yardley.

TURBOTS.—First, T. T. Parker. Second, J. C. Brierley. Highly Com-

mented, Mr. Yardley. Commended, H. Morris and H. Child.

OWLS.—First, H. Morris. Second, M. Rake. Highly Commended, M.

Rake.

ANY OTHER NEW OR DISTINCT VARIETY.—First, A. White (*Hyacinths*).

Second, F. W. Wilson (*Frillbacks*). Highly Commended, A. G. Brooke

(*Australian Wongo Wongo Pigeons*). Commended, Mr. Boyds (*Magpies*);

H. Morris.

RABBITS.

LENGTH OF EARS.—First, Messrs. Gust & Coleman. Second, J. Martin,

Junr.

COLOURED RABBIT.—First, B. Gale. Second, G. Jones.

FOR WEIGHT.—First, H. Rodgers. Second, G. Mills.

WOODEN HIVES—BEE STINGS.

Will some of your Scotch apiarians be so good as to say

what thickness the wood is of their wooden hives, and if they

keep them in a bee-house winter and summer? and also how they

find them answer, if better than the common straw hive for the

North, as it seems to be the general opinion here (county of

Durham) that they do best in straw, and especially in winter. I

have a wooden-bar frame-hive, and a glass, four panes on each

side-hive, and find when the temperature is at all low there is a

condensation, and the liquid runs out, especially from the wooden

hive; and I should, therefore, like to hear from some of your

Scotch apiarians their opinions as to the best kind of hive.

Wasps are very plentiful this season, and I am told have des-

troyed two hives out of four or five sent to the moors. Would

it not be as well for you to give Mr. Payne's remedy—turpentine

for destroying them, published in the useful little book "Bee-

keeping for the Many" published at your office? Besides, it

would be of great use to farmers, as they sting the women in

reaping. By the by, when on the subject of stings, I have found

the best and quickest remedy for a sting is to rub it well with

fresh urine: this cures and prevents the swelling sooner than

anything that I know besides. I have found soda, &c., seems to

be often worse than the sting, and creates more swelling.—W. A.

BEE SWARMING EXTRAORDINARY.—Mr. William Ashburner,

of Benthams, near Penny Bridge, has a hive of bees which threw

out three swarms in three successive days, all of which have been

hived, and apparently are doing well. The days were the 13th,

14th, and 15th inst. July has been very prolific for swarms of

bees, and beekeepers own that it is rather late for swarms to be

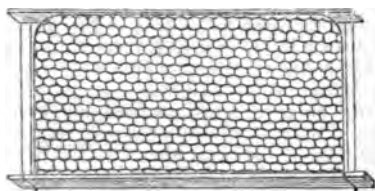
prosperous; but, if we are blest with a month or two of dry weather, there is no doubt but that honey will be most abundant in autumn.


MODE OF SUPPORTING FALLEN COMBS.

On the 6th instant, I dispatched a stock of Ligurian bees to London, on its way to the North; unfortunately, it was returned to me three days afterwards by my esteemed correspondent in the metropolis, with a note intimating that so many combs had dropped during its transit, that he was afraid to forward it to its destination.

On examination I found that four brood-combs had fallen on the floor-board. Most probably the mischance occurred at an early period; for not only were the combs securely fixed in the positions they occupied when down, but some square inches of new comb had been attached to the bars, and filled with eggs by the queen. A good deal of brood in various stages had been destroyed in attaching the combs to the floor-board, and to each other; but not a dozen bees appeared to have been killed.

In order to enable the bees to refix the combs in their natural position, I replaced them one by one, and kept each in firm contact with its appropriate bar by supporting it on a strip of wood, half an inch wide by a quarter of an inch thick, which in its turn was sustained by binding-wire passed over the bar at each end, as represented in the following sketch.



The upper edges of the combs were also kept in place by a couple of clips of this form  slipped over each bar near the ends, and embracing the sides of the comb. These very useful little articles are easily formed out of a strip of sheet zinc, or tin, about three-quarters of an inch wide, and 4 inches long.

The next morning I examined the hive and found the combs so firmly refixed by the bees that I was able to remove all the supports, and trust them to their natural attachments.

This mode of support is applicable to large guide-combs (which cannot easily be attached by melted wax) as well as combs that have dropped by accident, and may, possibly, be of as much service to others as it has been to—A DEVONSHIRE BEE-KEEPER.

ARTIFICIAL SWARMS.

It is not a pleasant task at any time to record one's failures. I do so to prevent, if possible, my brother bee-keepers falling into the same dilemma, as many, no doubt, think they can lead the bees to almost do anything, particularly such a simple affair as making artificial swarms. If I recollect rightly, Huber says that by abstracting eggs from one hive and placing them in another with worker bees, a complete colony will ensue. Tegetmeier says with his boxes artificial swarms can be formed any time when drones are numerous, by merely removing a bar of brood-comb and placing it in an empty hive which is to be put in the old one's place. They rear a queen from the young brood, while both old and young hives will do well and prosper, or words to that effect, while he lauds artificial over natural swarms in no small degree. (I think now it is on a par with Professor Bolman's roasted potatoes as sets for the prevention of the potato murrain.) But to proceed. From some cause or other one of my straw hives in the winter last lost its queen, although the workers were populous. Her death might have arisen from old age, it being a first swarm of 1860. They bred drones, and carried in at times small quantities of pollen; of course it was necessary for the rearing of them, but their numbers gradually diminished until the 10th April last, when I cut out a piece of comb, and fitted in a corresponding piece containing eggs from its more fortunate neighbour. Singular enough, this queen-rearing experiment failed, although all the eggs were hatched out. Nothing daunted, I, on the 22nd May, supplied it with another piece of comb, and now, July, I find that also a failure; so I

drove the few bees the hives contained, as robbers commenced plundering the stores which weighed 14 lbs. nett. My having a good supply of bar-hives, and drones being numerous on the 20th May, my established stocks in box bar-hives were very strong; so I took two bars of brood-comb from one, and placed it carefully in an empty hive, and clean, empty combs on each side to save the bees the labour of making more. I removed the old stock, and put the new one in its place. It being a fine day so many were out at work, I had a good swarm. They worked well for a week or so but reared no queen, although every egg is hatched out; and I am inclined to doubt the hive now having a queen from which I abstracted brood to renovate the hive first mentioned, for they since have really done nothing. For twenty years have I been a bee-keeper, but these failures to me are worse than all the bad seasons in that time put together. Naturally being desirous of keeping pace with the spirit of the age, I adopted bar-hives with the intention of preventing natural swarms decamping and increasing the honey-store; but from my ignorance of their habits, or my clumsy manipulation, I have to regret more than losing a natural swarm or two during the season, as I think that, had I not interfered, they would have done much better.

Perhaps Mr. Woodbury, or some other experienced and kind contributor, may be able to account for my failure; and any information on this subject will be pleasing to our fraternity in general, and be gratefully received by—A MIDDLESEX BEE-KEEPER.

LIGURIAN BEES.

You will like to know how it has fared with my Ligurians since you paid me your visit. The royal larva, which came in your hat, and which we placed in the glass over the stock, whose queen with all her eggs and brood had been previously removed, has been right carefully tended by the workers. The cell was covered in on Thursday, and may, therefore, be expected to give forth its occupant at the end of this week. It appears to be of the ordinary size, and is jealously guarded.

On Thursday I turned out the Italian queen you sent me on the 11th, with all her subjects, from the box in which she was at first located, giving them a larger bar-box full of honey and brood of common bees. This I did, first with a view to strengthen the population, and add to the space and riches of the stock; secondly, as I found a quantity of Ligurian eggs and brood in the box vacated by the Italian queen, I resolved to transfer to it the splendid population of the May artificial swarm, just over the Ligurians in the bee-house, and make them rear a family of hybrid queens, such as the royal larva will be which you brought with you, should she issue from her cell a perfect insect. These hybrid queens I shall supply as far as they go to my other stocks after depriving them of their English queens. The transfer was easily effected, and their (magnificent) English queen destroyed; and they are, now, doubtless doing their best to replace their loss. There were about 1000 Ligurian eggs, and quite young larvae in the box given to them. Of course, I took away every particle of the brood and eggs of their own queen. And, now, let me say how glad I shall be to receive another pure Ligurian as soon as you can spare me one, and the finer the better. I ought to have two pure bred and fertilised queens, so as to be able next year to replace every English or hybrid queen in my apiary with the Italian breed in its purity.—B. & W.

SKY BEES.

HAVING seen in your No. 16 an inquiry by "G. C." respecting a sound in the air like the swarming of bees, I beg to say that in July, 1852, my curiosity was raised by a humming in the air as described by your correspondent. As a lover of Nature I became desirous to know the cause; I, therefore, inquired of some labourers if they knew what the sound proceeded from. One of them, more intelligent than the rest, informed me it was caused by "midsummer hums," and was always heard in hot, dry weather. I asked him how he knew that, and if he had seen them. He replied, Yes, and that if I tossed a stone in the air they would come down on it. I did so, and found it to be correct; but before the stone reached the earth they ascended again with wondrous speed. Being still curious to become more closely acquainted with them, I procured a small junk of wood, which I smeared with Stockholm tar, hoping that some of them might adhere to it, and thus become captives. It had the

colour, wider considerably than the wreath itself; and then, with the usual fringe of green and white, the outer circle is perfectly finished off.—E.

(To be continued.)

PIT FOR GENERAL PURPOSES.

I WISH to erect a pit with heating apparatus, in which to keep *Petunias*, *Verbenas*, *Geraniums*, *Calceolarias*, *Cinerarias*, &c., through the winter. I should feel much obliged for your opinion of the following plan suggested by a friend. Inside measurement to be 11 feet by 7 feet; the ground to be excavated 4 feet or 5 feet deep, and built up to within a foot of the level of the ground with nine-inch brickwork, the remainder 4½ inch where the break occurs, leaving a ledge to be boarded across for a false bottom to be 3 feet or 4 feet above the flue; the fireplace to be at the end and the flue going all round the pit, terminating with a chimney near the fireplace, a ventilator to be in the back wall. I thought of having three lights glazed with rough plate; but my friend advises one light to be clear sheet glass, as I might bring flowers on to bloom sooner under that. My chief desire is to grow window plants, with a few for bedding purposes. I thought of only making use of the heating apparatus when likely for a frosty night, and even through the day when the thermometer stands near freezing-point. In ordinary winters I have kept my plants in a cold frame, but the last two I have had them all killed. I wish to know if the dry heat of the flue will be injurious, and if so how it can be remedied; and whether it would answer the purpose of striking cuttings, starting plants in spring as well as the common dung-bed. I may as well state the aspect is south-west. I have estimated the cost about £20. I should like, of course, to have one to answer every purpose.

If not asking too much at once, may I trouble you for a list of a few other plants I might grow successfully with such a pit?—A. B. C.

[As you are only one of many who are wishing for similar information, a few random thoughts on your letter may not be unacceptable.]

For all merely keeping of bedding plants, &c., through the winter, a deep pit is not desirable, as the deeper it is, other things being equal, the more likely will the plants be to suffer from damp. In making a pit from 4 feet to 5 feet below the ground level you would require to sink the stokehole 2 feet more in order to heat the pit by a flue, if the flue stands on the floor of the pit, and this depth, unless in a dry place, would either give you water to trouble you, or necessitate a considerable expense for draining to keep all dry. Besides, as we presume that you mean to have a wall above ground—say 2½ feet at back, and 1 foot in front, even on your plan of building, a considerable quantity of bricks will be swallowed up to enclose a space that after all would only be 11 feet by 7 feet.

The plan you propose is an excellent one under the circumstances, as far as the temporary flooring is concerned. We have several times recommended a similar plan, even when the wall was carried up solid, or hollow uniformly, by leaving a ledge of bricks out an inch or so wide, to receive the floor of boards, and in such a pit as yours we would have at least a couple of such ledges, one within a foot of the front wall plate, and another 2 feet or 18 inches from it, so that when plants got rather tall the boards could be whipped out and placed at the lower level, which would give the plants all the more headroom. Even in a common pit, with the boarded floor rather open—say two-inch spaces between the boards, such floors are a great advantage for equalising temperature, and even moisture in the atmosphere. Many things do not do well when set at once on the sanded or cindered floor of a shallow pit or frame, and they are very quickly heated and quickly cooled, the moisture within being quickly thrown into vapour at one time, or deposited in mist and hoar frost at another, requiring, therefore, more care in air-giving and protecting. But in such a pit as you contemplate, the great body of air enclosed will be a security against either extreme so far, and the lighting of a fire when necessary will keep that air more in motion than in a mere cold pit unheated. Unless in very frosty weather, plenty of air should accompany the lighting of a fire, and the plants will soon feel the benefit of it.

would not be so likely to encounter damps from rains soaking into the walls, or springing up into your stokehole and making your flue and furnace damp. But for general purposes, such a deep pit would be the most useful, as you might grow largish specimens in it in summer, or you might appropriate it to growing Cucumbers and Melons in boxes above your flue. A nine-inch flue would be large enough for such a place; and it matters little where it runs, though under general circumstances it might be as well if it was a foot from the sides all round.

If such a pit could be changed into a little house—say 2 feet or 3 feet wider, the expense would be no great deal more, and there would be no comparison in the amount of interest and enjoyment it would yield. You might then have a pathway in the middle 2 feet wide, with a moveable sparred platform on each side made into pieces, so as to be easily moved, and a narrow shelf or two over the pathway; or even one over the platforms for little things in winter, would enable you to hold more things than you could do on the mere level floor of a pit, and, best of all, you could work amongst them and attend to their varied wants in winter—whilst in a common pit, with no means of getting at the plants except by opening the sashes, they run a risk in continued bad weather of being either frosted, paroled, soaked, or burned up. Even if compelled to have such a pit as you propose, if the welfare of my plants and pleasure in attending to them were the chief considerations, I would have the back flue a foot from the back wall, I would have a small door in that wall, make the top of the flue a path, have the platform only for that width, and make up for that space by having two or three shelves against the back wall.

I have written on the supposition, that for some reason the sloping glass roof should not be much above the ground level, and that therefore there is something like a necessity for sinking into the ground in order to obtain depth and headroom sufficient. The idea of economy as respects warmth is also, no doubt, worthy of consideration; for though, when the ground gets cold outside of a sunk wall, the wall itself will be constantly parting with its own heat and the heat of the enclosed space, still as frost seldom penetrates above a foot or 18 inches, and as the sunk wall even when not isolated is free from being much influenced by sudden atmospheric changes, it will neither get cooled nor heated in anything like the same proportion as a wall exposed fully to all the changes of our atmosphere. A heated pit, with much of its wall freely exposed, loses heat fast by radiation from the walls, and especially in cold, windy weather.

Nevertheless, except in particularly dry places, so great is my dread of damp in the case of all plants merely requiring protection, or just enough of fire heat to keep frost out, that had I such things to do now, I would uniformly build on the surface of the ground instead of sinking beneath it; and I would concrete the floor of the pit inside, to prevent so far moisture rising from below, and in winter I would take care that not an extra drop of water should be spilled. With the same amount of height of wall, we would thus avoid the trouble and expense of removing the soil to the depth of from one to two yards, and though the wall would be exposed, we would neutralise that exposure so far by making a fourteen-inch hollow wall, instead of a nine-inch solid one, which would take hardly any more bricks, and would secure the inside bricks being kept more warm and dry, at the extra expense of having a coping-board 4 inches wider. For keeping out frost, and keeping in heat, we have proved that these hollow walls are a great economy. Any good bricklayer knows how to tie such a wall together, for we do not mean that two four-and-a-half-inch walls shall be built with an open space all the way between them. When properly tied the wall will be nearly as strong as a solid wall, and vastly more suitable.

Under such an arrangement, if the surface ground is hard, there would be no necessity for sinking down above a few inches for a foundation. If not solid enough, a concrete foundation will be cheaper than bricks; and if not to be used directly, a layer of tar on the surface of the concrete will prevent damp rising in the wall. For such bedding and window plants in a pit 7 feet wide, we should consider 30 inches in front, and from 52 inches to 60 inches at back, ample size enough; and if the flue went close to the front and back wall, there would be ample space for a floor boarding 9 inches or so above it. In such case the best plan of giving air would be by sashes. In fine weather they could be off altogether. In mildish, muggy weather, they should be tilted (sashes) back and front so that there may be

thorough circulation. Air should always be given at the top first, and, unless in severe weather, fires should scarcely be lighted without air being given.

If following our advice, you would make your pit into a house, 9 feet or 10 feet wide. If that was built on the surface you would have the pleasure of walking into your house on the level, or even stepping up into it, instead of descending into a pit, some 2 yards below the general level. Such a pit-house might be 3½ feet high in front, and 7½ feet to 8 feet high behind—for a sloping roof—a path in the middle, a level platform in front, and a sloping stage of from three to four steps at the back for setting dwarf bushy plants on. The extra expense in width might be saved in having a fixed roof, formed of rafter eash bars, 3 inches deep by 1½ inch wide, and placed so as to receive squares, 16 inches across and 12 inches deep. Three openings for ventilators could then be left in the front wall, 18 inches by 9 inches, and so that the air would pass over the flue. Three similar ones, but 1 foot deep, should be left near the ridge in the back; and thus making and moving sashes would be dispensed with. Such an arrangement would combine a great amount of utility with pleasure, and afford nice recreation in cold days when you could do nothing outside. A nice span-roofed house might also be formed, with side walls 3 feet, and height at the ridge 7 feet; ventilators would have to be placed there by some of the modes frequently adverted to. Either of these modes will be an improvement on the deeply sunk pit, and will be just as useful for other purposes in summer; and even more so, because you can get among your plants whatever you grow.

Ventilation has been referred to according to the circumstances. You must not depend on one ventilator in the back wall. One would make a too rapid draught in one place, and the ends if the door were shut would be in a state of rest. One advantage of ventilators in the front wall, as adverted to, over mere lifting of the sashes there is that the fresh air will not only be heated, but will be diffused beneath the plants as well as above and among them. For ventilators in the wall, a sliding piece of wood will be as good as any, though a small frame with a square of glass in it would be better. In severe weather a small bag of shavings or hay may be stuffed behind the ventilator; but that will only be required in severe weather.

As to glass, we would have nothing to do with rough plate, it is so dismal in winter. Use British or best foreign sheet, not less than 16 ozs. to the foot. If 21 ozs. it will be cheaper in the end, though we have had few casualties with 16 ozs. If such glass should be too bright in summer, the cheapest shade would be glazed gauze fixed in pieces inside the size of a light, by means of a small ring at each corner. If just past dry when not wanted it will last for many years, and cost scarcely anything at first. If anxious to preserve bloom in summer, pieces might also be stretched over the ventilators which would keep flies and bees out, and yet admit air freely if not too much glazed.

In ordinary seasons, as you do not wish to force much, all the heat from the flue to keep out slight frosts will not dry the air too much, if the floor is kept moderately damp; but in a continued frost or when a sharpish fire was necessary, it will be advisable to place vessels of water on the flue, and even to sprinkle the stages in sunny days when it would not be necessary to water the plants. In such frosty weather, if the sun is at all powerful, be sure and give a little air early at the back in the morning; and if the air be cold and dry in the shade, rather let the fire out in preference to giving a great deal of air under such circumstances. With a little given early, it will be warmed and moistened before getting among the plants; and if the house or pit rises 16° or 15° more than usual, the plants will like it rather than not, as some heat with a little air on will never draw or weaken plants like heat given without sun.

As to the comparative merits of growing and propagating plants in such a pit or house, and doing so by means of a dung-bed, that will depend greatly on the management. There is no means for securing rapid and healthy growth when heat can be safely applied like a sweet dung-bed; but a little carelessness as to the sweetness of the dung, shading, or air giving, will soon ruin all. In your pit with a little extra heat you can easily start your plants in spring; but if for propagating purposes you wanted as much heat as you would get from a dung-bed, you would have too much for such plants as Petunias, Verbenas, &c.

To combine both purposes you must make arrangements accordingly. Thus, suppose where your flue comes from the furnace you shut in a part or the whole of the front, and surrounded it by clinkers and covered it with a thin layer of rough

gravel, and then with sand, &c., you would have the means of getting what bottom heat you wanted for your cuttings, provided you could keep it there, and yet give enough of air to the other plants. Forming a small bed thus over the flue and covering with hand-lights would be as simple a plan as any; but if these lights are to be bought it would be expensive. We might hit on something simpler still. Suppose you wanted two or three propagating-pits, each 3 feet 6 inches long, and 2 feet wide, above your flue, we shall notice how to make one of these under different circumstances. In the above case, where the flue is surrounded with clinkers and covered with gravel and sand, we would make a bottomless box, the back board being 12 inches deep, the front 8 inches, the ends sloping accordingly. Set the box on the sand and have as many squares of glass—say two, as would go from back to front, a couple of tacks being placed for each in front to prevent them sliding. Such glass may be got in such sizes from 2½d. per foot. They will be quite close enough without any glazing or anything of the kind; and when there is too much condensed vapour on the under side, all you have to do is to turn the upper side downwards. A piece of paper or a piece of gauze will do for shading. The cuttings may be planted out, or, better still, inserted in small pots and moved out as soon as struck.

Another plan may just be mentioned. You have a ledge left for your flooring—well, have a two-and-a-half-inch wall or boards on the inner side of the flue of the same height, place a brick, &c., on the flue to bring it to the same level, and on these set boxes formed of zinc or sheet iron, for the bottom, and such boards, as above, for sides. Place sand on the iron, after making a few holes in it, to prevent too much moisture accumulating, and shut up all openings at the ends of the flue enclosed, so that the heat given off shall rise into the iron instead of passing along and getting into the atmosphere of the house, and in either case you will have a nice hotbed for cuttings, and be able to examine them in all weathers. By the latter plan you may have the flue all exposed in winter, and your platform for plants in the usual way. In spring remove part of the platform next the furnace, bring in one of these iron-bottomed boxes, and place it right, and then furnish it with sand or tan for plunging pots in; and when you want more room take out another piece of your plant platform, and so on. By such means you can keep heat at your cuttings, and yet keep the rest of your plants cool enough by giving plenty of air; and if the general atmosphere from using the flue is apt to get too dry, syringe the stages, damp the floor, and keep vessels of water on the flue.

With such care any plants may be grown in such a little house, though our advice would be not to attempt too many kinds at first. In relation to the plants you mention we would say, Keep the Geraniums on boards, and at the end next the furnace, giving air in all suitable weather. Verbenas may go next, also on boards, and be carefully watered, and smoked if a green fly appears. Petunias next, and not so particular as to the boards being dry. Cinerarias next, and if standing on moss kept dampish they will thrive all the better. In sunny days in winter might be syringed about two o'clock, so as to be dry before night. Calceolarias should also stand damp and cool. Give all the air possible to them, and if much fire is used sprinkle them on sunny days. They dislike fire heat altogether if it could be avoided.—R. FISH.]

FROST AND THE ASH-LEAVED KIDNEY POTATO.

I FIND that my Ash-leaved Kidneys care no more about the frost than the frost cares about them. I planted them the first week in March—not wise for doing so, I admit, but it was a convenient time for me to do so, and the weather being fine, I embraced the opportunity of planting. Well, they came up strong, not one missed until the frost made its appearance, and after two or three hours' hot sun they seemed all to disappear. I thought it was all over with them, but they got over it much sooner than I expected. They were re-established again, and filled up the broken rows and showed their green tops; but, alas! not for long, the next slaughter was worse than the first. I looked out of my bedroom window on that terrible morning, the 10th of May I think it was. I saw the fields covered with a fine frost; in a few minutes I was in my garden, and the first thing that attracted my attention was a pile of water covered with ice. I took the top of that off in a piece. I thought of the

and from the common type of the species. They consist not merely in the varied terminations, length and breadth of frond, shape and arrangement of pinnæ, but also in the varied character of the fruit, which, instead of being in continuous lines, is in some cases broken up into rounded dots, and in others into short lines or asplenoidal forms; while others, again, bear semi-frutescent fronds, and these last are rather of common occurrence.

In addition to the before-mentioned varieties, we have succeeded in finding about twenty-two highly rare and interesting forms, which there is every reason to believe will be permanent. They have, in most instances, been submitted to Mr. Moore, of Chelsea, author of "The Handbook of British Ferns," "Nature-printed Ferns," &c., who has examined and named them.

I will now enumerate these varieties as nearly as I can in the order in which they were found, giving the localities and a few other particulars respecting some of the new forms.

In June, 1859, I accompanied my kind friend, Mr. Holmes, your treasurer, on a short botanical sojourn to that fertile field of botanical research, North Wales. We devoted two days to the investigation of that portion of the Llanrwst valley which is nearly opposite to the town. Our object was partly to ascertain if another station for the *Asplenium septentrionale* could be found adjacent to that indicated by Mr. Newman, in 1854, all the plants of which are now eradicated, and also to discover what other rare plants inhabited the locality. It is almost needless to state that we were unsuccessful in finding another station for the *Asplenium*, but found out that there is another some two miles nearer to Bettys-y-coed. We explored several of the ranges of rocks, and met with many rare and interesting Phanerogamic and Cryptogamic plants. At the foot of the highest range of rocks, not far from the road over the mountains to Capel Curig, we came upon a most extraordinary and beautiful form of the *Blechnum spicant*. At first I supposed it to be a very beautiful form of the *B. strictum*; but, on examination, found it to differ considerably from that rare variety. Mr. Moore has since named it—

1. *BLECHNUM CONJUNCTUM*.—It was fortunately in fruit at the time, and a fine tufty plant. Fronds linear, very narrow, from 6 inches to 9 inches long, and from one-eighth to one-quarter of an inch wide; lobes nearly round, beautifully crenated on the edges; fertile fronds much longer than the barren ones, little more than a rachis, the lobes abbreviated into simple nodes, bearing the sori. It is new, extremely rare, quite unique, and beautiful.

About twenty yards further on, we came upon another extraordinary form—

2. *BLECHNUM LANCEFOLIUM*.—Fronds lanciform, somewhat less than the species, entire for about one-third their length; fertile fronds still more lanciform, and depauperated above and below, and much shorter than in the species. Mr. Moore says it seems as if the plant was in course of formation. This form is well described in the folio copy of "Nature-printed Ferns," to which I refer the curious for further information. I have since met with another form of this plant, in Staups-clough, near Todmorden; somewhat more developed than the Welsh form.

On our second day in Llanrwst valley, we found two good plants of the true

3. *BLECHNUM STRICTUM*; but, as this beautiful plant is well described in the work before referred to, I need not describe it here. I have since found about a dozen plants of this rarity in the vale of Todmorden, about 100 yards from Greenhurthery. A single plant of the *Lomaria stricta* was found, a few years ago, near Halifax, but was thought of so much value that it was next to impossible to get to see it. All the Fern growers were quite in a ferment respecting it. This plant, I believe, has since been lost. It was certainly extraordinary luck to find a dozen of this beautiful Fern all at once in the vale of Todmorden. It is extremely rare.

4. *BLECHNUM SUBSERRATUM*.—This rare and interesting variety I found last summer, in Cathol-clough; and a friend of mine, Mr. Monkman, found it about three years ago, near Castle Howard, in Yorkshire. The two forms slightly differ from each other. We have grown it since that time, and it proves to be a permanent form. I am not aware that it has yet been described. It is more distinctly pinnate than any other variety I have yet seen, normal in size, pinnæ mostly very much ascending, and serrate or subserrate on the inferior, and frequently auricled on the superior limb; fertile fronds, normal in size, with all the

interesting. In fruit in our fernery last season, and we have now plants from spores, which I am watching with much anxiety. (To be continued.)

AMERICAN BLIGHT.

I HAVE a garden containing about fifty Apple trees which ten years ago were infested with the blight. All the old remedies had been tried without permanent effect. I asked myself the question, "What is the object to be attained?" My common sense replied, "Total annihilation." Then, I said, "Destruction is the thing," and a "hard scrubbing-brush the weapon." The insects do not like the process, and have disappeared. If the slightest blight is observed in the crevices of the gnarled bark, it is immediately well scrubbed off. My gardener uses No. 3, John Barham's Patent, Kingston-upon-Thames, to be had at any brushmakers. With perseverance I expect the Larches might be cured in Mr. Godsall's nursery.—COMMON SENSE, Birmingham.

SYNONYMOUS FUCHSIAS.

JAMES ROLLINS surely does not for a moment suppose that these Fuchsias, marked "both the same" are really alike; yet the reading of his letter gives to me that idea. Either he has been victimised by some nurseryman, or he has not a florist's eye to note the differences in habit, style, form, and colour of the flowers. Duchess of Lancaster, the Old Duchess as it is familiarly called, is like none other. It is longer in the tube than Fairest of the Fair, longer in the footstalk, whiter and longer in the sepals, the corollas are as different as possible. Fairest of the Fair is the best formed; but the Duchess for colour—rosy violet it is called by florists, the same colour as Christine bedding Geranium, but a shade darker—infinity a more attractive flower, though the habit of growth of Fairest of the Fair is better, shorter jointed wood. Fairest of the Fair would be more attractive if the foliage was darker in colour, it is a little too glaucous. Prince of Prussia, James Rollins calls it. I suppose he means Princess of Prussia (Smith), white corolla. Well, between this and Eclat there is a wide difference. Eclat seems to have some of the old globosa blood in it, short and dumpy in the tube and furrowed, with stiffer, better reflexed sepals, and a corolla more like Fascination, thick, waxy, creamy. Princess of Prussia is marred by the streaks of red down the corolla: certes, I think Countess of Burlington is before it. Guiding Star and Venus de Medici—ye powers! as much difference as between—whom shall we say?—Lady Macbeth and Titania, or Ariel. Venus is the most useful Fuchsia grown; but Guiding Star, "you bonnie gem," you are past description, except that Guiding Star is Venus purified from all dross—a miniature perfection in every sense. I am encroaching upon valuable space. Only two more, General Williams like Lord Macaulay? Not a bit. Lord Macaulay is more after British Sailor. General Williams has an extraordinarily long peduncle or footstalk, too long for the proper display of the flower: its proportions are long altogether—long tube, long but well-reflexed sepals, and long rather than wide corolla, more like a chimney-pot than an inverted bowl, which is the peculiar characteristic of Banks' Fuchsias. If James Rollins would like to compare his with the proper kinds, and if he has not the privilege of visiting a gentleman's or amateur's place where these are grown, I will post him flowers and leaves of all the kinds he mentions, if he will let me know.

How about Potatoes? We are putting Short's plan in operation. I will give you some notes when the result is known.—N. H. POWNALL, Holme Pierrepont, Nottingham.

THE ACTION OF THE POLLEN—CUSTARD VEGETABLE MARROW.

IN some of your late Numbers a discussion has taken place as to the means by which the pollen of plants fertilises the ovules. I will not occupy your space with entering into this subject, except to draw attention to Dr. Carpenter's work, called "The Microscope." At page 457, and previous page, any reader may find what is known on this subject; and, as he mentions at page 458, the pollen grains may be observed with a very moderate instrument to protrude their pollen tubes, as I

shrivel, especially the best roots. The youngest, and consequently those that would stand, should start into growth first.

The old soil being removed, and the Vine roots secured as much as possible from harm, then lose no time in first of all making the open drains perfect, and then wheeling in the rubble drainage. Of this useful and necessary material be liberal, especially if the situation is low and wet. That having been wheeled in, levelled and rolled, then let it be covered with a thin layer of turf, the grassy side downwards; this will prevent the finer parts of the compost falling in amongst and choking up the drainage. That being completed, then begin to wheel in the compost, commencing close up to the walls of the house, and laying on a sufficient thickness at once; by so doing there will be no necessity for the barrow wheel, or even the feet of the men ever to be put upon it—at least, until that part of the border is, now operating upon, filled up again. One point must not be forgotten, and that is, not to fill up the border to its full height—space must be left for the roots. It, however, must be remembered, also, that the soil will settle considerably; and, therefore, due allowance must be made for that settling. All these points having been attended to, then the border is ready for the roots of the Vines. Uncover them and spread them out regularly on the surface of the soil, treading on it as little as you possibly can. Finally, cover up the roots with the nicest part of your compost, about from 3 inches to 4 inches deep, and that finishes the operation so far as that number of Vines is concerned.

There the cultivator might rest for that year, and allow that portion of his vineyard that he had removed to recover before lifting any more of his Vines; but if those unoperated upon are unfruitful, or produce indifferent Grapes, it would be better to have the whole renewed at once. However, I leave that to his own judgment, because circumstances alter cases.

It is quite possible that some of the lifted Vines may not do well: should that happen, then let young Vines be planted the season following, and let them gradually replace the old ones. Indeed, it is my opinion, borne out by practice, that whenever a border is renewed and the old Vines transplanted in it, young Vines should invariably be planted also the same season. If the old ones do well it is easy enough to cut away the young ones; but if the lifted Vines do not promise to come round again, then a year is saved by having young Vines planted at once ready to take their place if necessary.

The after-management of lifted Vines is the same as for Vines that have no need of transplantation, with the exception that I would recommend a severer pruning the first year: in some instances the Vines might be shortened in considerably. This hard pruning would help to balance the loss of roots, and thus the roots retained, or, rather, preserved, would be able to send up nourishment enough for the reduced branches. Then, again, as the roots have all been brought up near to the surface a greater care is needful to protect them from severe frost; and another point should be attended to, and that is, not to force them into action too early in the year—in fact, they will start more vigorously if not forced at all. Let the root action be encouraged if you will by warmth to commence first, and the top action may be safely and better left to the natural heat of the spring sun.—T. APPLEY.

(To be continued.)

SWEET WILLIAMS NOT BLOOMING.

CAN you inform me of the cause of Sweet Williams not flowering? Last year I saw plants from Hunt's seed advertised in your publication. I obtained some, and this year they have grown till each clump (I planted them in threes), covers a space of from 1 foot to 18 inches, but not one has shown the least sign of throwing up a flower-stem. I took off some of the offsets of one or two and struck them, in the hope that that might induce the main stems to spindle; but no, and the plants are now a picture of vigour, but still without any signs of flowering. I am in just the same fix with Hydrangeas in a small greenhouse: they grow in the most luxuriant style, and have done so for three years, but never a bloom have I had from them there. A large plant of Oleander serves me the same trick, forming its buds but never expanding them.

My house is somewhat in the shade, and the plants do not get more than three hours' sun in the day, though I grow and flower well Pelargoniums, Fuchsias, Gladiolus, Cinerarias, &c. The soil in the case of the Sweet Williams is the ordinary garden soil,

very light, but enriched before planting with a spit of dung. The Hydrangeas and Oleanders are both in sound loam, dung, and a little leaf mould.—M. G. C.

[The summers are too short and your gardening is too good for your locality. Where the sun shines so seldom in London or near it, there are hundreds of plants which will never do much good in the way of flowering. Send your Hydrangeas and Oleanders to Covent Garden, and substitute Camellias for them. Never plant a Gladiolus there, but Pelargoniums, Fuchsias, Cinerarias, and herbaceous Calceolarias would be just at home in your place, provided you shorten sail. You must not pride yourself so much on the fine glossy looks of your plants; less pot room, less watering, poorer soil, and more drainage, are all you want to beat anything and everything before you.]

GOOSEBERRY CATERPILLARS.

I HAVE about three hundred Gooseberry and Currant trees, the whole of which were infested with the above pest, and about twelve trees completely stripped of their leaves before I discovered it. I at once sent for some lime, pounded it into dust, covered all the trees well with it, and especially the stems, and in less than two hours I had the gratification of seeing them drop in hundreds to the ground, and vainly again attempt to ascend the stem, but the lime dust blinded them, and they afterwards were found dead under the trees by thousands, and I have not been troubled with them since; and I have had the finest crop of Gooseberries and Red Currants I have ever had.

The trees were also infested with green fly, and the lime dust completely did for these, and now my trees are as clean and vigorous as they have ever been, and the crops the largest I have ever had; whereas, had I allowed these pests to have their own way I should not have had a Gooseberry or Currant fit to use, besides spoiling the trees.

All other remedies are worthless when compared with this; for it did not take an hour to throw the lime on them, and the cost was not 6d. I consider it an invaluable remedy.

In the autumn I intend taking the old soil from round each tree and mixing new earth with lime, so as to destroy any eggs still remaining in the earth. I feel confident the lime has improved the foliage of the trees wonderfully; and after they were all killed a good shower of rain washed all the lime off, thus again improving the trees.—L. HANMER, *Mayfield, Sale, Cheshire.*

THE NEW AND RARE VARIETIES OF BLECHNUM SPICANT.

Found in the Neighbourhood of Todmorden and some other Places. (Read before the Todmorden Botanical Society, by the President, Mr. A. STANFIELD.)

WHEN a thing is common and obtrudes itself on our notice at almost every step, we are too apt to under-estimate its real merits, to overlook its beauties and peculiarities, and treat it with neglect. This has been the case with the *Blechnum spicant*. I confess that formerly I regarded it as one of the least beautiful and least interesting of all the British Filices; but, on examination it has risen greatly in my estimation, and to me it is now invested with beauty and interest equal to that of any other species. It was said of the celebrated M. Glauber, the chemist, that "he made it his business carefully to examine what everyone else threw away," and he found his account in it. So, if we carefully examine things that are common and neglected, we shall find our account in them, and be amply rewarded. We need not go to the Tropics nor the antipodes for novelties—they abound in the common and neglected things around us, if we only exercise our eyes and our limbs to discover them. All nature is rich in variety and resources, and persevering industry will always be rewarded.

During the summer and autumn of 1859, I and a few friends have examined some hundreds of thousands, if not millions, of plants of the common *Blechnum spicant*; out of these we have selected upwards of 200 forms, more or less abnormal. These are now in our hardy fernery, and I shall watch their behaviour, under cultivation, with intense interest. Many of them I have no doubt will revert to the normal form; but others may depart even more widely from it.

These varieties in many instances are but slight; yet, to a practised eye, they are readily distinguished from one another,

operation should be effected as rapidly as possible in the middle of a warm day, as the slightest chill is likely to prove fatal. For the same reason the centre of one of the middle-combs is a better position for royal cells than allowing them to remain on the edges of the comb, where they are usually placed by the bees.—A DEVONSHIRE BEE-KEEPER.

EXHIBITION OF BEES AND BEE-HIVES.—On the 20th inst. will be opened in the Orangerie, at the Luxembourg, Paris, an exhibition of bees and bee-hives, for competitors of all nations.

THE CANARY AND THE BRITISH FINCHES.

(Continued from page 331.)

3.—THE CIRL BUNTING (*EMBERIZA CIRLUS*).

German, Der Zaunammer. *French*, Le Zizi, or Bruant de Haye.

WITH this bird I am scarcely acquainted, it being the only one of the small British hard-billed birds that I have not kept in confinement; but as the present series would be incomplete without a notice of it, I need not apologise for quoting the following description.

A correspondent, writing to a contemporary says, "That the Bunting may be regarded as a very common bird in the neighbourhood of Penzance; but it is more a bird of the grove than hedgerows, except where there are trees. In this particular it differs from its closely allied relative, the common Yellow Bunting, which is a complete hedgebush bird in its general habits. We are indebted to our celebrated countryman, Colonel Montague, for adding this bird to our list of British birds, and pointing out its specific difference from the Yellowhammer. He discovered it in the south of Devon, and it has since been observed in the southern counties pretty generally distributed. From its general resemblance to the Yellow Bunting, it was probably overlooked until his zealous attention, as to points of natural history, enabled him to detect its specific value. The female is scarcely to be distinguished from the female of the Yellow Bunting, except that there is less of a yellow tinge in the plumage. The character of the nest, as to shape, locality, and materials, is the same; but the eggs may always be distinguished by their rather smaller size, and by being marbled over with deep brown markings, appearing almost black, instead of reddish-crimson, which may be observed in the common species. I can always detect the bird, when not visible amongst trees, by its song. Every one knows, in the Yellowhammer's song, the final note, resembling the word 'Twee,' a third in tone higher than the introductory twitter. The Ciril Bunting's song never ends in a protracted high note, but its little ditty, at a little distance, very much resembles, from its greater rapidity, the trilling passage of the Wood Wren—in fact, it might aptly be termed *Emberiza sibilatrix*.—E. H. R., *Penzance*."

The Rev. J. C. Atkinson, in his "British Birds' Eggs and Nests," gives the Ciril Bunting also the names of "French Yellowhammer," and "Black-throated Yellowhammer"—"a bird," he says, "long overlooked by our native ornithologists, and perhaps more frequently occurring than is even suspected; still it is by no means a very common bird, though indented as occurring in most of the southern counties."

The description of nest and eggs is from the Rev. O. Morris' work on "British Birds and Eggs":—"The nest is placed in furze or low bushes, and is usually made of dry stalks of grass, and sometimes a little moss, and lined with fine roots or a few hairs. The eggs are four or five in number, of a dull blueish-white, streaked and speckled with dark brown. They vary much in colour."

Mr. J. M. Bechstein, in his "Natural History of the Birds of Germany," while writing of the Ciril Bunting, says, "The top of the head and upper parts of the neck are olive green, with small black streaks. A golden yellow stripe passes from the nostril over the eye to the middle of the side of the neck. Another from under the corner of the beak; obliquely through them a black one, which, behind the yellow under eye stripe, passes down and joins the black from the chin. The back and shoulder-feathers are a fine light brown: on the back mixed with black and greenish-yellow, and on the shoulder-feathers only, edged with yellowish-green; the rump-feathers olive green, edged with faint longitudinal dark brown stripes. The lesser covert

feathers on the wings olive green; the next row blackish, with brownish-yellow borders; the largest wing-coverts and the quill-feathers grey black; the covert-feathers and the secondary quill-feather edged with brownish-red; and the primary quill-feathers having a narrow yellowish-green border. The slightly cloven tail black; the two outer feathers having a white wedge-shaped spot, all edged with a narrow border of yellowish-green. The throat black; lower down golden yellow. The breast fine olive green. On the sides near the belly light chestnut brown. The rest of the under parts golden yellow.

"The female is readily distinguishable from the male by her much lighter colour. The head and back of neck are olive green, and more striped with black. The back and shoulders are lighter rust brown, more spotted with black. The rump more streaked with black. The tail more dark grey than black. The stripes over and under the eyes of a paler yellow, a blackish line passing across the eyes, and which joins the dark borders of the cheeks. The upper part of the throat brownish, and occasionally spotted with black. On the lower part of the neck a lighter yellow spot. The breast light olive-coloured, with some small black streaks, and reddish-brown longitudinal spots. The remainder of the under parts pale yellow.

"The young are, before the first moult, on the upper part of the body light brown mixed with black, and on the under parts pale yellow, and black streaked on the breast. The older they become the more they attain the olive-green shade."

Bechstein further remarks, "They are easily tamed. The call of this Bunting may be recognised by the tone 'zi, zi, za, zirr,' and his song, that has some resemblance to that of the Yellowhammer's, though less melodious, by the syllables *sis, sis, sis, gor, gor*."

"They feed in summer chiefly on cabbage caterpillars and small black earth beetles."

"They breed," he says, "but once a-year. In the latter part of July they may already be found in the fields with their young, particularly in cabbage fields in the neighbourhood of willow trees."

Bechstein considers it a bird of passage in Germany. In this country they seem to stay all the year.

According to Mudie, "In winter the Ciril Buntings associate with the Yellow Buntings, which they resemble in their manners their notes, and partially also in their appearance, only they are rather smaller. Their air is softer, and their colours are more varied, and perhaps upon the whole finer. The voice, too, is not so loud or harsh, and the chirp of the female is particularly soft. It appears to be rather more an insectivorous bird than the more common species."

The different sexes and the young of this species seem to have been described by some naturalists as distinct kinds, owing, probably, to the little that was known of them.—B. P. BRENT.

(To be continued.)

SPARROWS.

I FOUND a vast deal has been said relative to Sparrows in your Journal. All labour under very mistaken ideas with regard to the usefulness of these birds, or flying mice, as my friend Mr. Newman properly terms them.

They do not consume caterpillars or insects. I have witnessed that in numbers of instances, in my own premises: on the contrary, they pick and eat every bud from fruit trees, and young green food, peas, seeds, &c., as they come up. I have numbers of Sparrows around my garden when a plum tree is covered with lice and caterpillars, likewise the cabbages and peas; they have ample opportunity of consuming them, but are entirely neglected.

Mice and Sparrows I never did yet hear or know of their usefulness. I do not know of a single case where a farmer, or a market-gardener, would wish to preserve such vermin; on the contrary, always did and always will employ some means for their destruction, where they are very numerous.

I am desirous to argue upon facts and plain truths. Let the person who can convince me that I am in error, and I will most willingly submit.—X. Y.

VARIETIES.

MANUFACTURE OF CAPSICUM PEPPER.—Any consumer of this article, who has no intention of poisoning himself, had better make it for his own use. Any of the species of *Capsicum* may

VERONICA ANDERSONI (M. F.).—The name of your Veronica is not Hendersoni, but Andersoni variegata, a good thing, and the treatment for an evergreen Fuchsia, if there was such, will suit it perfectly the year round. Very good loamy soil, as for best Pelargoniums, abundance of pot room, and to be freely watered all the summer, and to be merely kept moist through the winter, suits all these New Zealand Veronicas to a nicety; and they would all grow faster and more bushy if they were planted out of the pots in summer, to be taken up at the end of September, and potted for the winter. They also come from cuttings as fast and as easily as Verbenas; and, with you at Limerick, a three-year-old plant of any of them should stand an ordinary winter against a west wall with 2 inches of turf or coal ashes over the roots, and in severe frost two folds of matting nailed over the head.

CLIANthus MAGNIFICUS (M. F.).—It seems only a stronger variety of Clanthus puniceus, or Glory Pea of New Zealand, and the very same treatment as the Veronicas will suit it exactly. We shall be able to strike both of your cuttings. They came to London in your letter as fresh as they were when you cut them off the plants at Limerick, and your packing-material is even more than the best and thinnest oil paper. Pray tell us the name by which it is sold, as it is invaluable for enclosing flowers, cuttings, and even Rose-buds ready to work, in common letters by post, from one part of the three kingdoms to any place the farthest remote in any one of them. It is some textile fabric prepared with oil to imitate oilskin, and under four folds of it we could read your letter quite easily. Specimens of it should be sent to our great Exhibition next year.

ORANGE TREES, &c. (Flora).—It is very likely that both Oranges and Camellias have suffered more from cold and unhealthy soil than from want of pot room. It would in such circumstances be well to examine both now, and give fresh healthy soil, but do not give large shifts. Very possibly you may find that the roots may require less room until they are healthy and established. The heat of the conservatory will do very well, as the sun is powerful just now; but a little shading will be required on sunny days. We know nothing of the size of your plants or the boxes in which they are grown. Their treatment may ere long receive longer details.

HEATING A PIT (A Reader).—We cannot recommend any particular apparatus. Consult the advertisers whose names you will always find in our pages, and they will give the information required.

CONSERVATORY (B. H.).—The proposed site will suit admirably for what you propose, but very likely it may need a little shading on the afternoon of bright days.

CLIMBERS FOR COLD GREENHOUSE (A Subscriber, Cheltenham).—Mandevilla suaveolens, Passiflora corulea racemosa, Ballotia, Colvilli, and Rhynchospermum jasmimoides. In a very recent Number (No. 15, page 274) we published a long and descriptive list of hardy herbaceous plants.

POTATOES (G. B.).—Uncover the tubers and give one a rub in the hand. If the skin is firm on, then they are ready to take up; but if it peels off easily and yields to the rub, they are unripe. Holly should be planted about a foot or 15 inches apart, but that will depend on their bushiness. They would not hurt from being two days out of the ground.

HORTICULTURAL SOCIETY'S GARDEN (L. L. O.).—The garden at Kensington is only open for the admission of Fellows, or to the friends of Fellows, by a personal introduction. The public are admitted on promenade days, which take place on Wednesdays and Saturdays upon payment of half-a-crown. It would be well if the Society had a standing advertisement to this effect in the gardening papers at this season, so that persons like yourself coming to town could be informed on these matters.

ORCHARD-HOUSE TREES (Subscriber).—The reason why the Pears potted last spring and which bloomed profusely did not bear any fruit in the orchard-house, while those planted at the same time in the open ground did bear is this; the protection of the orchard-house induced the flowers to expand before the root action had sufficiently advanced, and when the flowers dropped there was not vigour enough and root action sufficient to develop the fruit, which languished and fell. In the open ground the root action and the blooming proceeded more gradually and more harmoniously, and by the time the bloom had fallen there was sufficient vigour in the tree to sustain the young fruit. For the destruction of the red spider syringe with Gishurst Compound, as you cannot very well shut up and steam an orchard-house.

VINES (Chas. Hairs).—See what we have said to "JACK KETCH."

BOOKS (R. B. Postans).—We do not know where "Elphinstone on the Vine" is published. We have never seen the book. If people do not advertise or send us their books they cannot expect them to have any publicity.

NAMES OF PLANTS (A. B.).—Your Sedum is a Saxifrage near marginata, but without the spike of white flowers the species is not within our ken. Your tall and very pretty spiky flowers are those of a very old and very scarce plant, Veronica glabra. The other plant is not determinable from leaves. The oiled silver paper was nearly as good as oilskin, but strong oilskin is a very bad scratcher of flowers. **(Rusticus A. B.).**—Your plant is Solanum quercifolium, or one very near that species, and not a native of New Zealand; but, being free and showy, is grown there and elsewhere till it runs wild. No plant is easier managed. Treat it exactly like a Scarlet Geranium, and keep it from autumn-struck cuttings. **(A Very Early Subscriber).**—The name of your plant is not known where you found it at the Crystal Palace. It is from Loddiges' old stove, and, without seeing its flowers, no one can tell what it is except being a greenhouse climber.

FLOWER SHOWS FOR 1861.

AUGUST 14th. PORTSEA ISLAND. Sec., H. Hollingsworth, Southsea.
AUGUST 20th. SHEPTON MALLET. Hon. Sec., Mr. J. Brabner, Shepton Mallet.
AUGUST 28th. DREWSBURY. Sec., Edward Forth.
SEPTEMBER 2nd. HECKMONDWICK. (Floral, Horticultural, and Agricultural.) Sec., G. Kelley, Heckmondwike.
SEPTEMBER 4th and 5th. CRYSTAL PALACE. (Dahlias, Cut Flowers of other descriptions, and Fruit.) Sec., W. Houghton.
SEPTEMBER 5th. WORKSOP. (Floral and Horticultural.) Hon. Sec., Mr. Geo. Baxter.
SEPTEMBER 11th. ROYAL HORTICULTURAL SOCIETY. (Dahlias and other Cut Flowers.) Garden Superintendent, G. Eyles.
SEPTEMBER 18th and 19th. BRIGHTON AND SUSSEX. Sec., E. CARPENTER.

NOVEMBER 6th and 7th. ROYAL HORTICULTURAL SOCIETY. (Fruit and Chrysanthemums.) Garden Superintendent, G. Eyles.

NOVEMBER 12th and 13th. STOKES NEWINGTON CHRYSANTHEMUM SOCIETY. Sec., W. T. Howe.

NOVEMBER 14th and 15th. CRYSTAL PALACE. (Chrysanthemum Show.) Sec., W. Houghton.

N.B.—Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

REMINISCENCES OF A GAMEKEEPER.

(Continued from page 369.)

WE waited thus till the mist cleared off, and then set about beating for our birds.

Let me describe the country. My master's property lay in the valley, along the middle of which a small stream wandered, and when I have stood on ground high enough (a railway bank, for instance) to watch its course, I have wondered how anything so crooked could have been accomplished. The ground gradually rose from this stream to the common. The higher we got the worse the land, till we approached the waste, when it became positively bad, and, if let alone for a time, vindicated its originality by throwing up a vigorous crop of heath. However unthankful such land may be for farming, it makes a good game country, especially when farmed by the old school; suffered to remain in eight-acre fields, and surrounded with good double hedge-rows. It was so at the time I speak of, and this, added to the mist, made it difficult to ascertain where the birds were gone. We, however, found them at last, and they went to the heath.

In such a country as I have described birds disturbed for the second time take to the waste, and after a day or two it is astonishing how they learn to take advantage of everything that is in their favour. I am not going to describe the years I stayed in this place, but mention these habits of the birds because they partly caused me to leave it. After the first fortnight of Partridge shooting, especially if the old cocks remain with the covies, they skim far out, just clearing the tops of furzes, heaths, and stunted firs. It is essential, before the birds are driven out, that the marker shall be on the heath to watch their settling, and he should be practised at it, or, in all probability, he will not be within a quarter of a mile. These commons are full of old roads and rides; they settle here, and run till they come to an open spot, when they take wing. The only hope of sport after the first fortnight or three weeks is in driving them into the heath or high furzes.

Although a common thing with me, I have often watched the dogs with delight. Emerging from the fields, and following the direction of my hand, anxious enough to put on their best pace, they course along the common, but suddenly they stop as if paralysed. They have arrived at the road where the birds settled only a few minutes before. They stand like statues. The birds are running before them. Hold up, Dic; steady, old dog. He knows it, and dropping his erect position, he draws himself along, his nostrils expanded, his eyes almost protruding from their sockets. Now and then he stops, and, lifting his head, looks before him. His instinct tells him the prey is in front. He stops; he stands with his head pointing to a patch of furze; he is immovable. Surely a bird has stopped there; beat it. Whirr, whirr, go two young birds. Both fall. The dogs move gently again; still more gently. The birds must be close to them. There is an open space a hundred yards ahead, they must cross that, or run into covert. They have reached the end of the road, and they do not rise.

Then begins another trial of the dogs. Furzes are three feet high, and where there are open spots the ground is covered with shoots so sharp that it is as though it were carpeted with needle points. None but dogs brought up in such a country will face them. I have seen high-couraged dogs from enclosed countries come upon one of these clearings where the furze had been cut or burned, and was shooting afresh, and fairly howl with pain while they stood lifting up one foot after the other in a vain endeavour to find ease. Such confine themselves to the green rides and tracks there are, and if called or whistled into the furze will take a long jump in and a long jump out again; but they will not beat it. The practised dogs care not for it, but stand the birds one by one, and the guns get a fair shot at each as it rises.

In such a country it is not only the unpractised dogs, but

propagating the latter by leaves and strips of leaves, as has been previously detailed, the whole leaf making the quickest and strongest plant, but cutting the leaf into strips being the best mode for quickly securing a number of plants. When mere beauty of colour is the great thing, these fine-foliated plants have much about them to recommend them even above the finest flowering plants.

LAWNS.

What has taken up the most time of the week, however, has been getting the pleasure-grounds and flower-beds all in trim order, in expectation of a great general visiting party. Grass-edgings round the beds were all to cut, plants to tie up, others to peg down, others to secure by sorts of go-betweens, and a large lawn, all to be nice and yet neither too long nor so short, stumpy, and hard as to remind one of a cutting that morning or the day before. There was early cutting, therefore, by the scythe in the morning, and machine cutting during the day. Most of it finished the best part of two days beforehand, so that all should be green, short, and smooth, and not retain the mark of scythe, machine, or roller. Lawns in this state are as much a luxury as the finest Turkey carpet, and I feel quite sure are more enjoyed than ever carpets could be. To see the graceful elastic steps of many fairy nymphs on such a lawn, without saying a word about their gentlemen companions, makes me always sorry to see "Keep off the grass" written on large cards, not only at places of general intercourse, but even at places where the numbers visiting never could do the grass any harm. It is a poor, costly thing to keep a lawn to look at; better lay it down in wood or stone, and paint it the required verdure tint at once. In public places where the lawn is small, vast multitudes might trample it too much, or wear it in lines and little pathways. But in all ordinary places, and especially in gentlemen's grounds, such notices should be broken up and pitched beneath the heating-kettle. If thousands traverse the finest rolled walks, if the walks do not become rough, they will at best be hard to the feet, and convey no more pleasant impression than walking on the highway, or the heated flagstones of our public streets. There is to every denizen of our towns a rich luxury in planting their feet fearlessly on a fine, elastic piece of short-cropped lawn. Vast numbers now and then on fine dry days, when most enjoyable, will almost be as good for it as a good rolling, and, therefore, let them enjoy it to the full under such circumstances, without these tempting and annoying notice-boards, as if English men and English women could not do what was right without these everlasting reminders, that they were only puppets in leading-strings.

Have commenced collecting soil from the sides of highways, &c., to begin propagating plants for flower-beds for next season.
—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c."* 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications.

We cannot reply privately to any communication unless under very special circumstances.

MARKETS (*M. Anthony*).—We do not see any service there is arising from publishing the market prices of fruits and vegetables, as it is impossible to obtain correct returns of the prices returned to the growers, which is the information you want. If we were to tell you that Peaches were fetching in Covent Garden 10s. to 15s. a-pound now, and upon that representation you sent yours all the way from Cornwall expecting to get the same return, you would be disappointed. The best way for you, or anybody else who has produce to sell, is to write to a salesman and ask him what price he can return you. The large price made of Potatoes in Lancashire to which you refer, was in one of those years when the disease was so bad.

VINES IN POTS (*B. H.*).—The following you will find the best for pot culture:—Black Hamburg, Royal Muscadine, Stillward's Sweetwater, Black Prince, Chasselas Musqué, Early White Malvasia. You can plant at your Strawberries after being forced.

"A LITTLE MARKET-GARDENER" (*H.*).—The correspondent who furnishes his communications under this title is really "A Little Market-Gardener" himself. As soon as this busy season of the year is over, we have a great deal to tell you about the results of our little market-gardening.

DISEASED FRUIT TREES (*W. H. H.*).—Your soil is the worst imaginable for fruit trees, and is literally at the root of all your troubles. First of all, your stations are far too shallow; 10 inches to 12 inches below the surface is far too little. They should not be less than 20 inches. Deepen them, and fill them with fresh soil taken from a loamy pasture. What in the world do you put peat and leaf mould to fruit trees for? Plant them in good turfy loam and nothing else. You will find them all do well in it. You may train your trees in every possible shape you can imagine, even in the fanciful one you sketch on your letter.

DRYING FLOWERS (*F. B., Kensington*).—After you have dried the flowers between sheets of paper, procure some sheets of cartridge-paper of the size you require, and arrange your specimen or specimens, as the case may be, on the sheet. Have ready a few strips of paper gummed at the back, and fix these transversely across the stems, leaves, or flower-stalks of your specimens, using as many as are necessary to secure the specimen in its position. Some people gum the whole specimen on one side and fix it entirely to the paper; but this is an objectionable way, as it effectually prevents the removal or re-arrangement of the specimens.

VARIKOATED ALYSSUM (*H. B.*).—Yes, it will keep in a frame or hand-glass like *Calceolarias*. We do not think the efflorescence on the pot a very serious objection. Rub it off the same as you would green mould, or any other dirt.

PLANTS WANTED.—Can any of our subscribers inform us if the following plants are yet in cultivation?—*Primula sikkimensis*, *P. capitata*, *P. Stuartii*, and the scarlet Brazilian Pine Apple.

CARNATIONS DESTROYED BY WORMS (*H. C.*).—There is little doubt but that your Carnations are destroyed by that pest the wireworm, the larva of a species of beetle (*Elatér*). The only remedies are frequently digging the ground, and hand-picking them (being yellow they are easily recognised) and laying pieces of Carrot or Potato on the ground near the plants. In a week or two we shall say something about Carnations in general.

CUTTINGS OF *LEPTODACTYLON CALIFORNICUM* (*Carolus*).—These will root as freely as *Verbena* cuttings if they are made at the proper time, or when the "wood" is in the right state. Did you never hear that the common *Hydrangea* will not root from cuttings when the young wood is on to the flowering state? If you feel the flower-bud just getting hard without being yet seen, that shoot would try your patience and your temper to cut it among Cucumbers; but, and if there was no sign or move for a flower, the *Hydrangea* would root in seven days in smart heat. Now there are scores of plants of that mood, and your *Leptodactylon* is one of them. Your cuttings were made of the flowering-wood, and they would not budge. Why should they till they taught you a lesson you will never forget? See what we have said about markets and drying plants to two other correspondents.

CONSTRUCTION OF PIT (*A Subscriber*).—First of all, we must in all friendliness tell "A SUBSCRIBER" that our engagements are such that we cannot refer to an old Number of 1848 to understand the plan he refers to. We can refer to nothing for which volume and page are not given to us. We like to be fair and aboveboard, and therefore say at once we will not do the work which our correspondents should save us. All references, therefore, to late volumes, &c., will be disregarded by us unless chapter and verse are given. Now, as far as we can do anything without going back to 1848 we will do what we can to oblige you. First, then, before commencing operations, read an article "Pit for General Purposes," at page 356. Second, for a narrow pit we prefer ventilating by the sashes; but for one 8 feet wide, it might be as well to have ventilators back and front. Third, for all forcing purposes, and especially in lean-to houses, more ventilation will be needed at back than front. For bedding plants, &c., it may be given freely at all places in suitable weather. Fourth, we imagine you mean to have a narrow lean-to house instead of a pit; if so, you cannot do better than act on the directions given in the article referred to, page 356. Fifth, such a house would answer very well, but either a short hipped roof at back, or even a spanned roof with a walk in the middle would be better; but just in proportion to the surface of glass thus exposed would be the difficulty of keeping the place heated in cold weather. If the back wall is there all ready, we would use it and make a lean-to. Sixth, in a lean-to a small brick Arnott's stove placed, if inside, within 18 inches of the back wall, would be cheap and answer admirably. See Mr. Fish's account of them in last volume, about No. 635. A small iron stove well managed would also suit such a little place. The fire for the brick stove might do outside if desirable, but it is more economical to have it inside. Seventh, if you made a span-roof a small flue would be better than a stove, but you would require brick a yard from the furnace, and the earthen pipes ought to be 6 inches or 7 inches at least instead of 4 inches. Eighth, the moveable wooden partition would enable you to have one end hotter than the other, whether you used stove or flue. It matters little where your flue is placed; but we would prefer it entering the end, along the front, and across the other end. You may make a shelf at front as cool as you like by air-giving. We fear we do not answer you so satisfactorily as we wish to do; but if there is still any doubt just try again, as we are anxious to oblige, and always glad to hear of the plan determined on. (*H. W. E.*)—If you look to our last year's volume, page 107, No. 634, and well examine an article in our present volume, pages 356 and 357, you will find everything to suit you. Fig. 3, page 107 last volume, would suit you best, heated entirely by dung on the outside; but if you liked it better you could have open flues across at B instead of the stone clinkers. In building, leave bricks out an inch or so, back and front, about the level of the line C, and that will do for a wooden platform moveable at pleasure. For mere protecting in winter, and heat in spring and summer, you will get nothing better combining the three essentials—economy, simplicity, and utility. The aim in winter should be to protect the glass, but to throw little or no heat into the walls.

DATURA ARBOREA (*M. F.*).—The meaning of well ripening the wood, is to give no more water all through September than will just keep the leaves from drooping. That stops the growth or such plants early in the autumn, and the force, or want of force in the roots, goes to ripen the wood more thoroughly; but as all the young shoots of all old *Daturas* are cut in as close as the young wood of White and Red Currants, or as *Pelargoniums* during the winter, there is no fear about the very bottom of the shoots will be as ripe as harvest time enough. It is the young wood which will rise next year from the cut parts that will bloom, then see the young shoots are never stopped.

MUSHROOM-BED IN GREENHOUSE (*A New Subscriber*).—In all probability it would harbour insects, particularly woodlice. Our first volume is out of print, but a complete set of *The Cottage Gardener* may still be had.

mentioned a stout wicker-worked basket-measure and some of its uses at page 186; also I make use of a basket containing a soup plate, and two table-spoons, a bag containing cotton wadding, and a pair of stout scissors; a new goose's wing, a two or three-foot length of very small tough wire, or stout thread, a honey-knife, a clasp-knife, a worn-thin carving-knife and a fork, a pair of cutting-pliers, corks and bungs of sizes, and a few of those small mahogany wedges which they use at Brighton to prevent the windows "chattering."

I am one of those persons whom the bees do not care about stinging, I can go amongst them and do what I require to them with impunity; still, as discretion is the better part of valour at super-taking, cutting out combs from their hives, or other violent operations, I put on a bee-dress made "of green lino, so as to inclose the head, neck, and shoulders like a bag, with sleeves made of green-glazed cambric to tie at the wrists," with thick-knitted worsted gloves to draw over the hands to enable the bees to withdraw their stings, and save themselves in cases of attack from their otherwise inevitable doom; for "In days of yore, when the world was young, a bee that had stored her combs with a bountiful harvest, flew up to heaven to present as a sacrifice an offering of honey. Jupiter was so delighted with the gift, that he promised to give her whatsoever she should ask for. She therefore besought him, saying, 'O glorious Jove! make a master of me, poor bee; give thy servant a sting, that when any one approaches my hive to take the honey I may kill him on the spot.' Jupiter, out of love to man, was angry at her request, and thus answered her:—'Your prayer shall not be granted in the way you wish, but the sting you ask for you shall have, and when any one comes to take away your honey, and you attack him, the wound shall be fatal, not to him but to you, for your life shall go with your sting.'"

Moral.—"He that prays harm for his neighbour begs a curse upon himself."—UPWARDS AND ONWARDS.

(To be continued.)

PLAGUE OF WASPS.

I AM induced to trouble you with a few lines, in consequence of reading in your Journal a communication from a correspondent relating to wasps. Having seen an advertisement in No. 14 from Phillips & Co., of Bishopsgate Street, stating that they kept wasp traps, I was induced to send for a dozen, and I here give you the results, aided by six pickle bottles. I give you the result up to this morning:—

July 21 caught 600 Wasps.	Aug. 7 caught 396 Wasps.
Aug. 1 " 500 "	" 8 " 300 "
" 2 " 740 "	" 9 " 421 "
" 3 " 360 "	" 10 " 417 "
" 4 " 503 "	" 11 " 328 "
" 5 " 408 "	
" 6 " 491 "	4964.—T. G.

[Our correspondent, whose address we have, resides near Teignmouth, in Devonshire.]

THE CANARY AND THE BRITISH FINCHES.

(Continued from page 391.)

4.—THE REED BUNTING (*Emberiza Schaniolus*).

German, Rohrammer.

French, Ortolan de roseaux.

THE Reed Bunting is also known by the names of Reed Sparrow, Black-headed and Ring Bunting, and Black Bonnet. They are generally distributed over England, but are more common in marshes, on the banks of rivers, lakes, and ponds, where they frequent the reeds, sedge, osiers, and willows.

In plumage they are of a rufous brown above with longitudinal black spots on the upper surface; the lower parts are whitish-brown. The head and throat of the male are black; when newly moulted these black feathers have a reddish-brown margin, and the head does not become jet black till winter weather has worn these brown edges off in confinement. Where they are less exposed to the action of the weather the head rarely becomes so jet black as in the wild state; a white stripe passes from the corners of the mouth across the cheeks, where it is broadest, and to the back of the neck, where it is faintest; the back of the neck has also a greyish shade; the tail is dark, the centre feathers being brownish, and the outer ones having much white. The female is distinguishable from the male by her lighter and

less bright colour, her head instead of being black is brown, with some darker specks and a light yellowish-brown stripe over the eyes. They feed principally on insects like the other Buntings, and also on the seeds of reeds, &c. When pressed by hunger in winter they frequent the stubbles and farmyards, and find a precarious living on hay seeds and corn. The nest is formed of grasses, pieces of reed tops, &c., and lined with fine grass and reed down, and is generally placed on the ground among long grass or rushes at the foot of a bush, or on the side of a bank.

The Rev. J. C. Atkinson says, "The eggs are four or five in number, of a pale reddish-brown colour, streaked and spotted with dark brown of a rich purple shade."

In a cage they are familiar, active birds, very fond of bathing, and very amusing by their grotesque movements and attitudes, particularly when disputing the bath with other birds. The song, if such it can be called, is little better than a scream. Standing erect, and throwing back the head with open mouth, they jerk out, *retch, retch, retch*, which is all the song I ever heard my birds of this species attempt.

Bechstein says, "In the room they are the tamest of all the Buntings, and particularly fond of music, which they will approach without shyness as near as possible, with drooping wings and spread tail, which they often wave, evidently pleased; this (he says) he has noticed not of one only but of many." In confinement they may be fed on canary seed, shelled oats, hard boiled egg, and a few insects.—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

CROOKED BREASTS IN POULTRY (Kent).—This distortion may be occasioned sometimes by the birds roosting on narrow perches, and when this is the case broad perches are the self-evident remedy; but crooked breasts more frequently arise from constitutional weakness in the birds. They are stimulated too much into rapid growth, and that which ought to be speedily solid bone remains too long in a grizzly and pliant state; the muscles on one side of the breast are more developed than on the other side, and they soon pull the bone crooked.

COTTON CAKE (S. W.).—This is the residue of cotton seeds after the oil has been pressed from them. There are two kinds—one from whole seed, and the other from decorticated seed. The latter is the best, as there is but little nourishment in the husk of the seed, and Professor Voelcker considers that the husk is actually injurious to animals if they are allowed to eat of it freely, the hard husk being very indigestible. The more yellow the cake the better. One pound of such cake per day would be the most we would give, combined, of course, with other food. It certainly enriches the milk, though not quite so nutritive as rape cake. We do not know the price, but you might ascertain from those who deal in rape cake.

WILD CANARIES.—As MM. Humboldt and Bonpland descended from the Peak of Tenerife and approached the town of Orotava they met large flocks of Canaries. They were uniformly green, but some had a yellow tinge on their backs. Their note was the same as that of the tame Canary. —(Taylor's Life of A. Von Humboldt.)

CHINCHILLA RABBITS (A Constant Reader).—Chinchilla Silver Grey Rabbits are those most likely to suit you, being very hardy and in good demand. The Himalayans would also suit you. With respect to the value of the above every fancier or dealer has his own prices. I can supply you with pure-bred Chinchillas from 12s. to 40s. per couple, according to age, perfection in colour, size, &c. With respect to their ears, I think they are greatly influenced by heat, as those I have reared in my Rabbit-house, which is rather warm, have much longer ears than those reared out of doors, although the parents are of the purest breed and themselves short ears. I also find amongst those imported from France many with long ears. The short ears are most liked, but I think size and colour should be the principal object of the breeder.—R. S. S.

FLOOR OF A RABBIT-HUTCH (H. I. J.).—I would not advise the whole of the floor of the hutch to be covered with pitch; but I think it would be a good plan to cover about 6 inches at the back of the hut, as the Rabbit usually goes there, and it would prevent the wood absorbing the moisture. A south aspect is the best situation for your hutches to stand; but the sun may be too strong for them, which you will observe by the Rabbits going into the nest apartment to sleep, or going to the back. They should then be shaded by throwing a little canvas over the fronts.—R. S. S.

LONDON MARKETS.—August 19.

POULTRY.

The beginning of the Grouse season is the only novelty or change we have to note; young birds have seldom been so scarce in England as this year. We shall have to look to Scotland; and, judging from appearances, we shall not be disappointed. The birds are small, but the young bear their full and proper proportion to the old. The supply of poultry is very small, not equal to the average.

Each—s. d.	s. d.	Each—s. d.	s. d.
Large Fowls	3 6 1/2	Leverets	0 0 to 0 9
Smaller Fowls	2 6	Grouse	2 6, 5 6
Chickens	1 9	Pigeons	8, 0 9
Duck	2 6	Rabbits	1 1 1/2
Geese	4 6	Wild	1 1 1/2

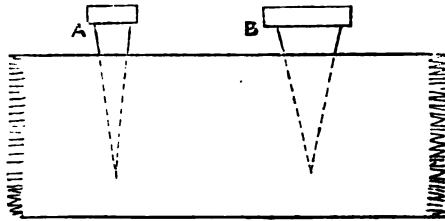
MECHANICS AND MATHEMATICS APPLIED TO GARDENING.

(Continued from page 379.)

THE WEDGE.

THE wedge may be described as two inclined planes placed base to base. Nails, the edge of an axe, needles, brad-awls, and many cutting instruments are able to penetrate the substances which they are required to pierce, by being of a wedge form.

We showed, in considering the inclined plane, that the more gradual the slope—that is, the more acute its angle, the less force was required to impel up it a weight, and precisely for the same reason the more tapering—that is, the more acute the angle of a wedge, the less force is required to make it penetrate. Supposing the nail A is one-eighth of an inch in diameter at its widest



part, and requires a force of 200 lbs. to drive it home, then the nail B, being one-fourth of an inch in diameter, would require 400 lbs. to do the same. The wood and the lengths of the nails being alike.

Even where the angle of the wedge and the force of each blow are accurately known it is difficult to calculate the power of the wedge exactly. For example, in splitting either timber or stone, the divided parts act as levers to pull those parts asunder, and, consequently co-operate with the wedge in effecting the division. Thus, if a log of timber 6 feet long is split by the wedge through half its length, the other half is much more easily split, because the two sections of the half divided act as levers, and their assisting force progressively increases in proportion as the cleft is extended by the wedge.

Mr. Ferguson correctly observes that the wedge is an important mechanical power, because it effects divisions which could not be effected by the lever, the wheel and axle, or the pulley, for the force of the impelling blows makes the cohering parts vibrate, and thus enables them to separate more easily; yet, we should scarcely have noticed it if we had not seen it employed very efficiently in levelling down a ridge of gravel so hard and conglomerate that but for the assistance of a row of oaken wedges the labour would have been tenfold.

In this instance a straight line was marked with the pickaxe at about 2 feet from the brink of the surface of the rocky gravel and along that line about twenty obtuse wedges were driven, separating a mass about 40 feet long, and rendering it easily precipitable into the hollow below which was required to be filled up.

(To be continued.)

SPORT FROM GERANIUM FLOWER OF THE DAY.

"AN OLD SHOWMAN" in a contemporary publication recently speaking on the variegation of Geraniums says, "He understood Flower of the Day came variegated from a seedling, the only variegated Geranium on record that did so to his knowledge." Last year my plants of this Geranium were sorry scrubs, but I planted them during the summer, wet and cold as it was. There were two or three of them threw up plain shoots from the crown of the plants, which I, in a fit of curiosity, took off and propagated. This year I have them planted out; the habit of the sports is stronger than the parent, and the colour of the flower is deeper. I enclose a truss and leaf. How does Mr. Beaton's theory of the cause of variegation in plants being some disturbance at the birth of the seed stand affected by this? Does his argument cut both ways? Is this not rather a corroboration of the views of "AN OLD SHOWMAN," that variegation is caused by disease, and *vires vered*? Is there such a Scarlet Geranium as Queen's Perfection? I enclose you a truss and

leaf of one I had under that name from Clumber Park last year.—N. H. POWNALL, *Holme Pierrepont, Nottingham.*

[Flower of the Day was a variegated seedling raised by Mr. Kinghorn, and it has been throwing up green sports every year since it was let out. Miller, in his "Gardeners' Dictionary," recorded the first variegated Geranium from seeds—the crimson variegated Geranium, of which there is now a bed full of it on the Rose Mount at the Crystal Palace. Mr. Beaton says that every plain Geranium which throws off a variegated sport, and every variegated Geranium which makes plain sports like that you sent, might have been recorded as variegated seedlings, if people had known how to deal with the seedlings. Mr. Lenox exhibited variegated seedlings, and plenty of them, at the old Chiswick Shows many years ago. Mr. Beaton tells us he had variegated Geranium seedlings every year, except two, since 1845, and now he says he has more of them than he knows what to do with. But he assures us that you have mistaken the views of both the "OLD SHOWMAN" and his own on this matter, and that it would be of no practical use to discuss the question on your issue. He adds that Mr. Knight, who was the founder of the best part of our knowledge of these things, that a diseased fruit tree, a cankered Apple tree say, could not be cured by budding or grafting, and that seedlings from it would inherit the disease. But if you take Flower of the Day as a diseased Geranium, and Alma as one much more affected with the same disease, and cross them, if the theory of this disease is sustainable, all your seedlings ought to inherit it, as seedlings always do, when real disease is in the system of one or both of the parents, as well in the animal as the vegetable kingdom; but your seedlings from those very diseased parents will be healthy. How is that? But trusses of all Geraniums from first to last never did, and never will, travel in letters or close boxes without falling to pieces the moment the box or basket or letter is opened. We could see nothing of your flowers but a confused jumble of loose petals. The way to send Scarlet Geraniums is to cut a long piece of the flower-stalk with the truss when the first flower has opened, by planting the stalk in wet sand, the receiver will see most of the flowers opening one after another; but a truss of open flowers will not remain entire over two miles by post.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

Brussels Sprouts, continue to plant them out, as also Cape Broccoli and Cauliflowers. *Cabbage*, make a sowing to stand in the seed-bed through the winter; also a sowing of Red Dutch for summer use. *Cauliflowers*—about the 21st of the month is generally selected for sowing them, as also the *Beth Cos Lettuce* to stand through the winter. The ground to be not over-rich to prevent luxuriant growth; to sow thick, and to prick them out in time before they become lanky. *Colworts*, get out plants on rich ground. *Cucumbers*, the lights may be drawn off those that are in frames during gentle showers of rain, but not when the rain is so heavy as to be likely to injure the leaves. Gather Gherkins for pickling. *Dwarf Kidney Beans*, keep the crop closely gathered, for if allowed to remain until they are too old for use, they discontinue to bear as they otherwise would do. *Onions*, sow a good breadth. The Welsh is hardy, and the Deptford will bear the winter well, but the Silver-skinned is most invaluable as a winter crop. Pull up and house those that have done growing. If the main crops have long necks the tops may be broken down; if not, there is no advantage in doing so. *Tomatoes*, remove some of the leaves which shade the fruit from the sun. Keep all the shoots stopped when there is sufficient young fruit on the plants. As the rains are very partial, it is necessary in many localities to water seed-beds and recently-transplanted crops. Keep the soil loose where practicable. Give timely thinnings to the crops that require them, and water afterwards if the soil is dry. *Turnips*, sow the Dutch and Stone sorts on some spare plots of ground.

FLOWER GARDEN.

It will be necessary to go over the beds frequently, pegging down where necessary, removing decayed flowers, and cutting back such of the shoots as encroach upon the edgings of the beds. During hot weather take care that newly-formed beds of Pinks and Pansies do not suffer from drought. Finish the layering of Carnations and Picotees. Pull out decayed petals from the calices where seed-pods are forming, otherwise wet will lodge and the seeds perish. The shoots of those trees infested with

remedy this we insist on having boards along the edging for the feet to stand on, so that when, after tying, &c., the hoe is used along the bed to level it, no mark of toes or heels can be seen. These minutiae serve to promote a general good effect, and where there is so much to do it becomes painful to see work conducted on the do and undo principle.—B. F.

TO CORRESPONDENTS.

“We request that no one will write privately to the departmental writers of the “Journal of Horticulture, Cottage Gardener, and Country Gentleman.” By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the “Journal of Horticulture, &c.,” 162, Fleet Street, London, E.C.

PETUNIA BLOSSOMS (D. F.).—The “oilskin” in which you packed the flowers was an old skin oiled, and apparently from the head of a drum—at all events, it was the worse thing we ever saw, and your flowers could not be made out. The same post brought us fresh specimens from the Belfast Botanical Garden as an experiment proposed by ourselves to the worthy Curator on the efficiency of oilskin packing. Even in Belfast this skin is double the right thickness. The right sort of botanical packing oilskin is as thin and filmy as the finest silver paper, and had it not been oiled you could read manuscript through it. It must be had from first-class chemists’ shops as we think. But the Belfast specimens are quite as fresh as when cut. The variegated Petunia from Jersey was under initials.

CALCEOLARIAS—VEGETABLE MARROWS (Maybelle).—You had better secure seeds of your Calceolarias, and sow next month. Meanwhile turn the plants out of the pots into light sandy soil on a north border near to a wall or fence, and if alive at all they will push up young plants from the bottom, and the smallest rooted bit of these if grown on will fill a large flower-pot next season. The old plants never do any good again—at least, rarely. We presume you are speaking of the large-flowered herbaceous kinds. Do you not mean that your Marrows come whitish-green? That is how they ought to be when young and cookable. If you mean that they actually do come white there must be something particular in the kind or in your treatment. Do you shade or cover the fruit?

WHAT IS “CADLUCK?”—The common Hemlock is called in Cheshire Kedlock, a provincialism. Perhaps this may be the plant meant by “A YORKING BEGINNER.”—K. In Kent and the southern counties the Charlock, or *Sinapis arvensis*, is called Cadluck.

BOOKS (Clara).—The best rudimentary book on botany you can have is “Hensley’s Rudiments.” The *Cottage Gardener’s Dictionary* does contain the botanical and English names of plants, and all gardening information you can possibly want.

ROSE CUTTINGS (D. K. E.).—It is quite immaterial whether you place the cuttings in a northern or a western aspect. The great object is to avoid too great exposure to direct solar influence, and too great excitement. If you make use of a western aspect you must just shade the more.

EXCHANGE OF PLANTS (H. W. E.).—We hardly know how this can be managed. If we insert a list of plants wanted, and we also insert the replies, these will amount to advertisements. We would have no objection to insert them as such.

CULTIVATION OF THE TRUFFLE (Thorn).—We shall be much obliged. It is rather an interesting subject.

BROOM (Dropsy).—It is the green tops that are used. Boll 1 oz. of the green tops in a pint of water down to half a pint, and take two table-spoonfuls every hour till it acts on the bowels.

DISEASED VINE LEAVES (J. S. Solihull).—We have no clear recollection of your former inquiry, but the leaves sent show that we were so far right. Although shaking the conclusions of you and your friends we are so far glad to say that on neither of the three leaves is there a single trace of red spider. We cannot wish you anything hardly better, in a gardening point of view, than that you may always remain as ignorant of the appearance of that destructive rapacious little insect. The lower side of the leaf of No. 1 is much warted—an appearance produced by various causes, but chiefly from a too confined atmosphere, and a greater degree of richness at the roots than the leaves are able to get rid of in dull weather. There is a small mark or two as if a thrips had been nibbling, but we are not sure if there had been one; but we found not a single trace of a spider or its webs. No. 2 is equally covered with these fungoid warts, but not so forward. The sulphur has been used judiciously, as the Vine leaves do not seem to have suffered thereby; and the reason why the fungoid warts have become more brown where most exposed to the fumes, is that sulphur and lime are great enemies of the whole fungus family, or nearly so. Such leaves whether thus acted on by sulphur or not will not perform their functions so well as Vine leaves clear of all such incrustations; and though in this respect we do not think the sulphur will do great good, it will assuredly help to keep the red spider and mildew at a distance, only you must take care the fume is scarcely ever above 160° when the sulphur is on it. No. 3 shows symptoms that it, too, would be attacked with these warts as it gets older, and the edges of the leaves show signs of scalding from want of air being given early enough, or from being very close to the glass when the house was not only too hot but too moist—such as it would soon be on one of these bright mornings if the air was delayed being given a little too long. The great remedy for warting is promoting a reciprocal action between roots and leaves, and giving the latter a healthy bracing atmosphere. If the roots are deep in wet, rich soil, the leaves cannot persevere enough in dull weather, nor yet in fine weather if the atmosphere is too close, warm, and moist. If not satisfied you might send a leaf or two again, as they were a little faded; but we assure you that they contained no trace of spider or other insect, though in one spot there was the appearance that a thrips had been trying for a mouthful.

CUTTINGS OF CURRANT TREES (H. E. F. S. Edengrove).—The time to plant cuttings of Currant trees is in the spring. We do not think seaweed would be at all injurious to a pig to lie on it.

VINE LEAVES BROWNED (A Subscriber, Palermo).—The leaves of your Vines are scorched by the rays of the sun being collected into a focus by the inequalities of the thickness of the glass, which form lenses and act in the way exhibited.

CALCEOLARIAS DYING OFF (H. C. W. E.).—The subject was discussed most fully in our pages last year; and there you will find the results of the experience of many reliable men—such as Mr. Fish, Mr. Robson, and other practical gardeners. The premature decay is influenced chiefly by the mode in which they have been watered. There is no remedy now but to fill up the blanks from the reserve-bed as they occur.

PLANTS TO FLOWER IN WINTER (W. M. M.).—Your query is answered in our last Number at page 307. Mildew on Roses can be kept away by mulching over their roots and watering two or three times a-week with liquid manure. As soon as mildew appears, dust the leaves with flowers of sulphur, and syringe after three or four days. If the mildew still appears, repeat the process.

PRESERVING ROSE PETALS.—J. M. wishes for directions how to preserve the petals of the Rose, so as to retain their odour for a long time. The only mode of preserving them that we know of, is by exposure to a warm current of air in a dry room, but not in the sunshine. This is the mode in drying them for pot pourri. We shall be obliged by information on the subject.

WOODLICE (H. G.).—We know of no mode of poisoning them. All that we can recommend for destroying them is in No. 3, page 49, of our present Volume.

NAMES OF PLANTS (J. A.).—No. 1, *Phalaris arundinacea variegata*, the Ribbon Grass or Gardener’s Garter; 2, *Lunaria biennis*, or Honesty; 3, *Spiraea japonica*; 4, a Campanula of some sort, a very defective specimen; 5, a bit of a Gladiolus, ditto. (G. S. N.).—The plant which has come up among your *Eschscholzia* is *Clarkia pulchella alba*. (S. H. L.).—1, not known; 2, *Erica Bowleana*; the unnumbered plant is *Solanum pseudo-capsicum*. (S. Deson).—1, *Malva moschata*; 3, *Agrimonia eupatorium*; 4, *Teucrium scordonia*; 5, *Hypericum dubium*; 6, *Epilobium parviflorum*.

FLOWER SHOWS FOR 1861.

AUGUST 9th. BELFAST ROYAL BOTANIC AND HORTICULTURAL SOCIETY. (Plants, Fruits, and Vegetables.) Sec., George A. Cartuthers.

AUGUST 14th. PORTSEA ISLAND. Sec., H. Hollingsworth, Southsea.

AUGUST 28th. DEWASLEY. Sec., Mr. Edward Forth.

SEPTEMBER 2nd. HECKMONDWIKE. (Floral, Horticultural, and Agricultural.) Sec., G. Kelley, Heckmondwike.

SEPTEMBER 4th and 5th. CRYSTAL PALACE. (Dahlias, Out Flowers of other descriptions, and Fruit.) Sec., W. Houghton.

SEPTEMBER 11th. ROYAL HORTICULTURAL SOCIETY. (Dahlias and other Out Flowers.) *Garden Superintendent*, G. Eyles.

SEPTEMBER 18th and 19th. BRIGHTON AND SUSSEX. Sec., E. CARPENTER.

NOVEMBER 6th and 7th. ROYAL HORTICULTURAL SOCIETY. (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.

NOVEMBER 12th and 13th. STROKE NEWINGTON CHRYSANTHEMUM SOCIETY.

Sec., W. T. Howe.

NOVEMBER 14th and 15th. CRYSTAL PALACE. (Chrysanthemum Show.)

Sec., W. Houghton.

N.B.—Secretaries of Societies intending to advertise in our columns will oblige us by sending an early intimation of their exhibition days.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, &c., SHOWS.

AUGUST 1st. ROSENDALE. Sec., Mr. William Platt, Waterfoot, near Manchester.

AUGUST 1st. GEOL. Hon. Secs., Mr. R. Blackburn, and Mr. C. Browning.

AUGUST 3rd, 5th, and 6th. SHEFFIELD. Sec., Mr. Wm. Henry Dawson, Sheffield. Entries close July 25th.

AUGUST 3rd. AYLESFORD APRIAN SOCIETY. Sec., Mr. John Laughland.

AUGUST 26th, 27th, 28th, and 29th. CRYSTAL PALACE SUMMER SHOW.

Sec., Mr. W. Houghton. Entries close July 27th.

SEPTEMBER 3rd. POCKLINGTON (Yorkshire). Sec., Mr. Thomas Grant.

Entries close August 26th.

SEPTEMBER 11th and 12th. MANCHESTER AND LIVERPOOL. Sec., Mr. T. B.

Ryder, 2, Elliott Street, Clayton Square, Liverpool. Hon. Local Sec., Mr. S. H. Hyde. Entries close August 14th.

SEPTEMBER 24th. BRIDGORTH. Sec., Mr. R. Taylor, Bridgorth.

SEPTEMBER 26th. MIDDLETON. Sec., Mr. Thomas Mills.

NOVEMBER 22nd, 23rd, and 26th. DARLINGTON. Sec., Mr. J. Hodgson.

Entries close November 11th.

DECEMBER 2nd, 3rd, 4th, and 5th. BIRMINGHAM. Sec., Mr. J. B. Lythall,

14, Temple Street. Entries close November 1st.

DECEMBER 11th, 12th, 13th, and 14th. CRYSTAL PALACE WINTER SHOW.

Sec., Mr. W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

CURIOSITIES OF FOOD.

THE season of 1860-61 will long stand alone for the scarcity and consequent dearth of Game. Tastes may be acquired, but after a time they almost become necessities; and variety in food is understood even as a part of the necessary knowledge of the physician. It is a mistake to imagine that Pheasants, Partridges, and Grouse interest only a few. From Sydney Smith, who said, “If there were a pure pleasure in this world, it was roasted Pheasant with bread sauce,” down to the tall, thin, shabby man who haunts poulterers’ shops late at night just before they shut, and then with watering mouth and glistening eyes, asks if there is a stale Pheasant or any other Game cheap,

half a sheet, would be an excellent thing for weak eyes to read print or manuscript through in glaring weather or strong night light.—D. B.]

CULTIVATION AND MANURE AS FERTILISING AGENTS.

By HENRY TANNER, *Professor of Agriculture, Queen's College, Birmingham.*

IN order that a clear view may be taken of the relative value of these agencies, it is necessary that the nature of the soil should be examined, and its general properties understood. Soils may be considered as consisting of matter in three distinct conditions. The first has been termed the active matter of soils, because it exists in a condition capable of being dissolved in water, and consequently available for entering into the circulation of plants and ministering to their growth. It has, therefore, received the term "active," as being ready for the immediate discharge of its duties; and in this respect it differs very materially from the two other portions of the soil. The second portion has been named the dormant matter of the soil—not that it is dead or useless, but simply in a state of inactivity, being insoluble in water, and therefore unfitted for entering into plants. It might, however, be said that all matter which is not active must be dormant, and this is quite true; but for the convenience of more clearly explaining the component parts of the soil, a further division has been found desirable: and hence we have a third portion, or the grit of the soil. We must, therefore, view the soil not as a homogeneous mass, but as consisting of ingredients congregated into three classes, as—

- The active matter of the soil;
- The dormant matter of the soil; and
- The gritty portion.

By the aid of chemical analysis each of these may be again subdivided into the several ingredients of which it may be composed. It will at once be evident that an analysis of the entire mass of the soil would give information which must be looked upon with caution, and used with discretion. If an agriculturist wishes to know the composition of any particular soil, it is manifest that he requires, not an examination of the entire soil, but to know the constituents which compose the active ingredients of the soil, for these are the materials which influence the immediate fertility of the soil and regulate its productive character.

If you examine the three classes already named, you will see that they are simply distinct stages, through which the soil has progressed or is progressing. We have the grit or stony portion—the type of the original rocks, from which all soils are produced; and these are the fractured particles which have withstood the disintegrating action of the atmospheric agencies for a longer period than the other portions. But as under the crumbling influence of the air, moisture, and change of temperature, these become broken up into a smaller and finer state, this gritty matter changes into the dormant matter of our soils, in condition and appearance forming part of the soil, but still insoluble, and therefore valueless as food for vegetation. Such, then, is the matter of the second class, or the dormant portion—viz., the finely disintegrated portions of the rocks and stones, apparently available for vegetable growth, but still not in a condition to fulfil that expectation. When, however, the dormant matter has been more fully acted upon by the chemical agents in the rain and air, then its character alters, and it no longer remains insoluble, but it readily dissolves in water, and consequently assumes the active condition. Thus, each of these stages is a progressive advance—the grit will ultimately become the pulverised dormant matter, and this will advance into the active condition. For these reasons we may consider—

- The active ingredients of the soil as the portion ready for immediate use;
- The dormant portion to be rendered useful by cultivation;
- The grit, which is the store for future years.

We have every reason to believe that each of these portions may be composed of matter equally valuable as fertilising agents, but differing only in one respect—viz., the time of their being available for use. Dr. Daubeny proposed the two appropriate terms of "active" and "dormant" for the two conditions already described, and, in a communication to the Royal Agricultural Society, has shown the extent to which this distinction exists in soils. From the analysis given, it appears that about one-half of the alkalies and one-eighth of the phosphoric acid were in an active form in the soils examined, and the remainder were

dormant. If, therefore, a person had estimated the powers of the soil by its full analysis, he would have anticipated the aid of nearly double the quantity of alkaline matter and eight times the quantity of phosphoric acid which really exists in a form available for immediate use.

I shall now proceed to show the manner in which bodies existing in the soil in a dormant condition can be rendered active, and thereby available for the processes of vegetation. I need not do more than remind you that two agencies are very influential in accomplishing this. These are rain water and changes of temperature. Rain water is not pure water; but as it falls through the air it dissolves carbonic acid gas existing there. It also carries with it some of the atmospheric air; and these gases, being conveyed into the soil, perform very important duties, and contribute to the one which now claims our attention—viz., the conversion of the dormant ingredients of the soil into the active condition. Chemical research has proved that carbonic acid and oxygen co-operate in carrying on a slow and almost imperceptible action upon the ingredients of the soil, thereby changing the insoluble, gritty matter of our soils into dormant matter, this again into the more complete and active state, and then they assist in the final appropriation of it by the crop. Thus, the same agents co-operate throughout the entire change, and enable matter to assume these new forms. This action is of a chemical character, but it is powerfully promoted by the mechanical assistance rendered by changes of temperature. The influence of this is to be traced to the fact that bodies when they are hot occupy more space than when they are cold: hence, by rendering a body hot and cold, you weaken its cohesive power. This is especially observable when the change of temperature is great, or when water is present in the soil. All have noticed the effects of frost upon the clods of soil in our fields—how the frost binds them together with the hardness of a rock, and, when it thaws, crumbles them into a powder. This same action takes place in the particles of the soil in a greater or less degree, according as they may be more or less exposed to the influence, and this breaking up of the soil exposes fresh portions to the action of the chemical agents spoken of. Thus, the combined action of these very simple agents accomplishes by slow but steady action very material changes in the soil, rendering its fertilising ingredients available for our use, and unlocking the stores which Nature has made for our present and future requirements. This is a very hasty sketch of the materials which we have to deal with; but we must go on to show in what manner the processes of cultivation render the soil more fertile by the development of its own resources.

(To be continued.)

WHAT TO LOOK FOR ON THE SEASHORE.

(Continued from page 382.)

HOLOTHURIDE (continued).—SIPUNCULIDE.

ECHINODERMATA (concluded).

THE BROWN SEA-GHERKIN (*Ocnus brunneus*), is quite smooth of a pinkish-brown colour with dark spots. Its body is pentangular, and on each angle are ranged nine large suckers. The tentacula are white, extremely long, and either expanded into finger-like processes or simply pinnate towards the extremities. It is ordinarily about three-quarters of an inch in length, although it frequently attains a larger size. It is a very sluggish creature, and is found on shell-banks at various depths, both on the east and west coasts. It is common in the Frith of Clyde, and the most familiar of all the species on the shores of the Isle of Man. It is also taken with the dredge in the loughs of Strangford and Belfast.

THYONES.

THE COMMON THYONE (*Thyone papillosa*).—This creature when in a state of rest presents somewhat the appearance of an egg in shape. It is of a brownish-white colour, more or less dusky. It has the power of lengthening itself considerably; and when its tentacles are withdrawn has an uneven appearance, bulging out on one side. It measures from 1 inch to 3 inches in length. Its skin is tough and covered with suckers, which are not retractile. The tentacles are ten in number, large, and of a whitish colour. This animal has the power of ejecting its viscera. It is found chiefly in Berwick Bay, but is by no means uncommon on the coasts of England.

and the latter dredge for this very game, the spectator would naturally watch the operations with additional interest when provided with the means of introduction to the creatures captured.

We now proceed to a higher order of marine animals, to which has been given the title of "Crustacea."—W.

(To be continued.)

THE NEW AND RARE VARIETIES OF BLECHNUM SPICANT.

Found in the Neighbourhood of Todmorden and some other Places.
(Read before the Todmorden Botanical Society, by the President, Mr. A. STANSFIELD.)

(Concluded from page 382.)

13. *BLECHNUM ANOMALUM*.—On the 29th of last September, my inestimable friend, Mr. Nowell, and myself devoted nearly a whole day to the examination of that portion of Walsden lying above the church; in fact, the locality which had previously yielded our friends the *Blechnum imbricatum* and the *Blechnum crassicaule*. The weather proved rather unfavourable; we had loud thunder, with heavy showers at intervals, and, had it not been for the large masses of inclined grit rock, a thorough wetting would have been the consequence. Our slight investigation of the irregular ground adjoining the church and Birks Mill yielded us little in the way of novelties. As the weather improved towards evening, we ascended to the top of the enclosed land above Henshaw, and came to the moorland. Here were abundance of *Blechnums*, and it was not long before we came upon a most extraordinary form, a form that at once arrested and riveted my attention. Fronds 9 inches to 1 foot in length, attenuated, all the pinnae contracted, all the fronds fertile half way down, all barren below. I had previously witnessed so many freaks played by my little favourite, that I was quite prepared to meet with great divergence from the common type. My mind had sometimes been occupied by imagining varieties of structure of which I thought it might be susceptible; but here was a greater anomaly than I had contemplated in the visions of fancy. I had, up to this time, examined innumerable specimens of *Blechnums*, and had concluded that, when in fruit, it must invariably bear dimorphous fronds; but the plant before me was in fruit, bearing amorphous ones only. This, of course, would remove it into another genus, and constitute it a true *Blechnum*. The most obvious distinction between a *Blechnum* and a *Lomaria* being, that the former bears amorphous and the latter dimorphous fronds—that is, according to Hooker. My surprise at this anomalous structure was only equalled by the pleasure and delight with which I beheld it. And I bore away this prize which Nature here offered me with that pleasing satisfaction and gratitude that can alone be felt by others under similar circumstances. Mr. Moore, of Chelsea, has named it *Blechnum anomalum*. New, unique, and extremely rare.

14. Towards the middle of October I felt a strong desire to revisit the locality which had already yielded so many treasures. Accordingly I devoted the whole of a fine autumnal day to the purpose. Proceeding to the exact spot where the *Blechnum anomalum* had been gathered, I made detours in various directions, from 200 yards to three-quarters of a mile from the place, closely scrutinising the sides of most of the little moorland rills, damp banks, dikes, bottoms of old walls, &c. I laboured assiduously and most incessantly for about six hours, and though several interesting forms turned up, I got nothing very important. Towards evening, however, I made another glorious "find." "Perseverance is again rewarded," exclaimed I. There it was, far up in the moorland, a gem upon which human eye had probably never gazed, growing cozily in the green sphagnum, almost in the water, drinking in the liquid element which silently oozed from the peat above. Surrounded by other common *Blechnums*, it seemed a fairy form among Satyrs. How greedily, but yet how tenderly, did I handle it—did not at all heed going up to the ankles in water—should have gone up to the neck, even in midwinter, to get such a charming thing. The spot on which it grew was about 400 yards from that where the *Blechnum anomalum* was got. Like that variety, it had amorphous fronds, from 4 inches to 6 inches in length, all fertile half-way, very attenuated, thin, and almost membranaceous in texture. The autumn cold had slightly seared the ends of the fronds; but, notwithstanding that, I thought it by far the most beautiful *Blechnum* I had ever seen. Mr. Moore has since named it

Blechnum anomalum minor. Perfectly unique and exceedingly rare; in fact, I believe these are the only plants known.

15. *BLECHNUM MULTIFURCATUM*.—Mr. T. Stansfield and myself met with this variety last autumn near Over Darwen, Lancashire; and we have also received it from Mr. Hillman, Fern collector, gathered near Windermere. Fronds rather above the usual size, all more or less ramosely divided at the ends. Very rare.

16. *BLECHNUM BREVILOBUM* (Moore).—I gathered this pigmy but beautiful variety last autumn, in a ravine, a little above Acre Mill Rossendale. Fronds from 3 inches to 4 inches long, scarcely pinnatifid, more entire than any other form I have yet seen, the pinnae being only short triangular lobes or blunt teeth. My acquaintance with *brevilobum* is not sufficient to warrant me in saying that it will be permanent; should it, however, remain constant for another season, it will be a great acquisition.

17. *BLECHNUM GRACILE*.—This I have found growing among the millstone-grit rocks that bound the upper part of Harleywood Slack. Much less than the normal form, very slender; lobes distant, slightly contracted, much less coriaceous than in the species. It has every appearance of being a permanent form, but this time alone can determine.

18. *BLECHNUM ANGUSTATUM*.—This variety, or sub-variety, I have found more widely diffused than any other. Fronds narrow, linear in outline, less than the species, lobes short, closely set, frequently tiled. It forms beautiful stellate patches, and is very interesting.

19. *BLECHNUM LATIFRONS* (Moore).—This variety, or sub-variety, was gathered by Mr. Nowell and Mr. Patman last autumn in Mytholm valley; and I have also met with it in Eastwood, Pennant-clough, and some other places. Fronds broad, lobes very broad and ample, thick and coriaceous. It is a large and fine form.

20. *BLECHNUM FURCATUM*.—This variety or sub-variety, is by no means unfrequent. I have met with it in almost every locality in this and other neighbourhoods, though in no case, that I have yet seen, are all the fronds characteristic. In most cases the plants only bear one, two, or three fronds that are furcate, with others normal. This seems very extraordinary when we find so many other forms of far greater divergence so perfectly constant. The *Blechnum cristatum*, for instance, has all the fronds crested without a single exception, whether the plants be raised from spores or otherwise, and so of others. But the same thing occurs in *Scolopendria*, which is rarely, if ever, found with all the fronds simply furcate, whilst the multifid forms are perfectly constant. I am not so much surprised at this in the case of *Scolopendria* as in that of *Blechnum*, as the construction of the rachis, and the venation in the latter would induce us to suppose furcation would often occur. Under cultivation, the *Blechnum furcatum* often produces trifid or branched fronds. I am not without hopes, however, that we shall some day meet with plants bearing uniformly furcate fronds. These, when they are found, will be great acquisitions.

21. *BLECHNUM ASPLENIODES* (of Moore).—This is a large-growing variety, or sub-variety, distinguished by the sori not being continuous, as in the species, but broken into linear or asplenoid forms. Should it remain permanent it will be a great novelty. It was gathered last autumn in Ramsden valley by Mr. John Fielden, and I have also found it in Catholesclough and other places.

22. *BLECHNUM ABRUPTUM*.—I have met with several good forms of this variety, or sub-variety, during last autumn. Fronds normal in size, but terminating abruptly at about two-thirds the usual length; occasionally the two last pinnae changed into two miniature fronds, giving a most singular aspect to the plant. Fronds injured by insects or cattle are not unfrequent, and these put on the appearance of abruptness; but the plant here referred to appears to be naturally abrupt or truncate, the ends of the frond being abortive. As the same thing occurs in *Lastreas*, *Polystichums*, &c., I see no reason why it should not happen in *Blechnum*. But this another season will determine. Should *Blechnum abruptum* remain permanent, it will be no trifling acquisition.

A word as to the cultivation of *Blechnums*. No Fern is more easily managed. A strong loam, mixed with decayed leaves and rotten sphagnum, with fragments of grit-rock interspersed, and a moist atmosphere, are all that it requires. When the soil is light it should have more moisture. Sand or grit is most essential, as the slightest acquaintance with the plant is sufficient to convince any one that it takes up silica; and it would be

worth the while of cultivators to try silicate of potash as a manure for *Blechnums*. Its native station is in the subalpine region, on moist banks, by dashing streams, murmuring brooks, and dripping rills—the precise spots where the lovers of nature delight to linger, where all nature is free, where man may for a time forego the cares and anxieties of life, and where his mind can acquire that vigour and freshness, and that joyous complacency, which towns and cities fail to give.

TRADE LISTS RECEIVED.

Select List of Hyacinths and other Bulbs. Recommended and sold by William Paul, F.R.H.S., Cheshunt Nurseries, &c., Waltham Cross.—We have examined this list, and can safely say that Mr. Paul has succeeded in his object “to exclude every variety of mediocrity or doubtful merit.” The varieties enumerated are comparatively few; but embrace all the best *Hyacinths*, *Narcissuses*, *Jonquils*, *Tulips*, *Crocuses*, &c.

WORK FOR THE WEEK.

KITCHEN GARDEN.

GIVE all possible encouragement to advancing crops by stirring the surface of the soil, and by earthing up such as require it. *Basil* and *Marjoram* to be cut and dried just as they are coming into bloom. *Cabbage*, prepare ground for a large plantation for standing over the winter, to come into use in April, May, and June. *Carrots*, make a sowing for early spring use on a light, dry-laying piece of ground that is only moderately rich. *Cauliflowers*, if seed was not sown last week it should now be done. *Celery*, attend to the earthing, and where the attacks of slugs are apprehended dust with lime about the plants before closing the earth around them. *Endive*, make a last sowing for spring use. Continue to transplant from former sowings when the weather is favourable. *Lettuce*, if a sowing of the various sorts to stand the winter was made during the past week, another good sowing should be made about the latter part of this week. The former to be transplanted in the autumn, and the latter to remain in the seed-bed to be transplanted in the spring. *Onion*, sow seed of Spanish, Tripoli, or Straesburg, to stand the winter. The Welsh may also be sown for drawing in the spring. The other sorts are best transplanted in the spring for bulbing. *Spinach*, the winter crop should now be sown, if not yet done. The operation of sowing above recommended will not admit of much delay; nevertheless, it will be nearly useless to sow without watering and shading: therefore, if this cannot be conveniently done, the various sowings must remain over until a change of weather takes place. Continue to water all the crops that will receive actual injury without it, particularly *Celery*. Keep a sharp eye on the larvæ or grub of a species of cockchafer, which at this season does considerable injury to newly-planted crops, by eating off the roots. The drooping of the foliage is a sure indication of the enemy being at or near the roots, where he is frequently to be found. Carrots and slices of Mangold to be stuck in the ground, where the grubs will feed upon them, and may easily be destroyed.

FLOWER GARDEN.

Collect and dry annual seed. An abundance of self-sown plants of *Lobelias*, *Campanulas*, &c., will be found in the beds where the old plants have been growing, these should now be secured by pricking them out into pans or boxes filled with a light, rich soil. Sow *Clarkias*, *Nemophilas*, and *Collinsias* in any spare piece of ground. Candytuft will also do to be sown now. New seed vegetates most readily. Sweeping, rolling, and mowing to be attended to at this season. A thorough cleaning of walks from weeds to be made. Evergreen cuttings to be put in, and preparations to be made for the removal of large shrubs by digging around the roots.

FRUIT GARDEN.

Finish cleaning the runners from Strawberry-beds and rows, and make fresh plantations. Set those intended for forcing where they will have the full benefit of the sun. Thin and shorten the shoots of Peach and Nectarine trees; do everything possible to effect their maturation. Prepare for planting in the autumn. Remove all superfluous shoots from wall fruit, and expose the fruit; but this must not be done by cutting off the foliage. For the *Bellows* to be in use.

is owing to the laying in of the shoots, and the remedy must consist in their proper regulation. Place dry bean-stalks cut in lengths of about 6 inches among the branches, and by this means most of the earwigs may be caught before the fruit becomes ripe.

STOVE.

Shade on bright days as usual, and maintain an atmosphere sufficiently moist to keep the plants in good health without incurring the risk of over-watering, and creating stagnant moisture about the roots. Cleanliness to be attended to, the surface soil of large specimens to be stirred, and weeds and moss removed. Pay attention to such superior plants as *Allamanda*, *Dipladenia*, *Stephanotis*, *Echites*, *Euphorbia*, *Luculia*, &c.

GREENHOUSE AND CONSERVATORY.

Where *Camellias*, Chinese *Azaleas*, and the hybrid Indian *Rhododendrons* were not potted in the spring, and require shifting, the present is the most favourable time, as the young wood is now getting somewhat firm, and the flower-buds are perceptible. The pots to be well drained, using turfy peat and sand, adding an equal portion of fibrous loam for the *Camellias*.

PITS AND FRAMES.

Root a good stock of *Maurandias*, *Lophospermums*, Ivy-leaved *Geraniums*, and other climbers, which add much to the beauty of our flower gardens. Also, robust-growing plants, such as *Salvias*, *Ageratums*, &c., likewise *Lobelias*, *Anagallises*, *Nierembergias*, and other dwarf favourites. All these will root readily in sandy peat or sandy loam, with the addition of a little bottom heat, and a close frame. The propagation of stock for supplying next season's demand should engross all the attention and time that can be spared. Continue to pot off the early-struck cuttings, bearing in mind that all the more delicate bedding *Geraniums* should well fill their pots with roots before winter, or many will be lost. While the stock is increasing attention must be paid to the amount of winter accommodation for them, which, whether in the shape of pits, frames, or larger structures should be got in readiness to receive them before bad weather sets in. Sow the seed of *Pelargoniums* as soon as it is gathered, and also that of any other greenhouse perennial if ripe, before the middle of September.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

EARLY Ash-leaved Kidney Potatoes were raised with hardly anything the matter with them; but fine-sized tubers are beginning to get diseased, after they were housed thinly in a dry place. Part of the ground had Savoy and other things planted between the rows, and these, having the earth spaded against the stems, will soon cover the ground. Other places where the kinds of Potatoes had larger head growth, after the Potatoes were lifted, have had some rotten manure thrown on the surface of the ground, and beginning to dig deep, a trench is cut out every 2 feet, and *Broccoli plants* that had been pricked out 4 inches or so apart are raised with the spade, the most with balls, and are set some 18 inches apart in the shallow trench, the rotten manure on the surface mixed with the soil, spaded all along the roots, so as to fill the trench half full, firmed, and then well watered. The trench is then filled up by digging until it is far enough to cut out another trench as the work proceeds. The same plan is adopted with pieces of early Peas, Beans, &c. The pricking out of the Broccoli and other plants, as previously recommended, is a great advantage in such circumstances. It is not so necessary where great quarters of a kitchen garden can lie fallow until it is deemed time for planting the general winter crop. If I have any envy in visiting gardens, it is in seeing these bare quarters in April, May, and onwards. I never can spare but the smallest piece for such purposes, and the only objection I have to fine kinds of tall-growing Peas is, that unless they are in rows some 20 feet apart, nothing of any consequence can be grown between them. Even those of moderate growth will be grown most economically in rows a good distance apart—say 15 feet to 20 feet, as crops come in nicely between them, and the spaces which the rows of Peas occupied may be used for something else when the Peas are gone. Early Peas are best grown by themselves, as the ground can be cropped again at once as soon as the Peas are gathered. Planted out Cauliflower on a bank, and also in a turf pit, where it could receive a little protection to prolong the cutting-season into the

winter and spring. Cauliflower will long remain in a good condition if cut with a foot of the stalk, all the leaves removed, and the stalk inserted in sand, neither wet nor dry, in a shed rather dark and cool, but safe from frost. Watered Dwarf Kidney Beans, Peas, &c., which are feeling the dry searching weather much, and mulched as opportunity offered, water getting scarce. Cleared second and third crops of Cauliflower ground, and marked it out into fifteen-inch rows, with $2\frac{1}{2}$ feet between for late Celery; putting a little rotten dung in the shallow trench, and digging it well, so that the surface of the trench is little, if anything, below the general level, and when earthed up there will be no chance of moisture accumulating about the roots. We grow the most of our Celery in beds; but for spring use we rather prefer a few single rows, so far as keeping well is concerned. Cleaned all the Celery in beds of suckers, and earthed up a portion to be fit for table by the last of September. Planted out Lettuces and Endive in any open corners. Will shortly fill some turf pits, so as to receive a little protection in winter.

I notice that the early-planted *Brussels Sprouts* are strong and sprouting, and other greens are equally strong. The *Brussels Sprouts* were planted some 2 feet from row to row, and from 16 inches to 18 inches in the row; but a great gardener told me the other day, that I ought to take a leaf out of his book and plant them considerably thicker, and then from the shade the large lower leaves will drop off sooner of themselves, and the sprouts will come sooner and better. Perhaps there is something in it, at any rate I will try with a few early ones next season. It would be a great thing if our cottager friends could gather earlier and nearly double the quantity from the same ground of such a fine vegetable, the motto of which may well be "Cut and come again; the more you take from me, the more you will get." If the close, firm sprouts do not come fast enough, cut off the small head at the top, and daub the top with lime and charcoal to cause the wound to heal. The top is even more delicious than the sprouts. I have known epicures in vegetables that would take nothing else so long as they could be had.

FRUIT.

Proceeded with plant-houses, fruit-houses, and fruit trees out of doors much the same as last week. As the first crop of Figs which have given a nice supply for nearly three months are about over, have watered the house, and syringe and shut up close in the afternoon, to encourage the second crop to come on, so that it may be mostly gathered by the middle of October, as after that time Figs are chiefly useful for looking at. Gathered the Morello Cherries, as the wasps render it very problematical whether covering them up would save them; and as they are never used here in the natural state for dessert, they might as well be brandied or preserved for tarts, as give the wasps the chance of having them. Expect we must gauze the openings to the vineries, and put gauze or thin coverings of wadding over late Peaches. Wasps hate anything woolly. What with nest-taking and the chilly night on Monday, have seen fewer about since. Cleared out early Melon plants that had perfected their crop, and made the pits and frames ready for late Cucumbers, bedding-plants, &c., as we cannot afford to have any empty spaces in-doors or out of doors.

FLOWER GARDEN.

Out of doors the chief thing in the ornamental ground has been keeping the place nice and clean. Either from the frost or other causes the evergreens have been extra troublesome this season. Have pieces of the lawn as nice as may be at night, and only let a little wind come, and in the morning the place will be strewed with old decayed leaves of Laurel, Sweet Bay, &c. Even this season, though some large Elms seem in good health, every breeze shakes myriads of yellow leaves from them, though we never used to be troubled until September; and we see at once how much out of place they are before they are swept or picked up, for the latter is the best plan, and by far the quickest, if young nimble hands and flexible backs can be used for the purpose. Of course, we always expect evergreens to shed a few leaves in summer; but this season they have been extra troublesome. I used to have two rows of standard Roses as part of an avenue of beds on a principal part of the lawn, and frost having made them nearly all wrecks, I had made up my mind not to replace them, but to keep all Roses in a corner by themselves, so that their shed petals might not disfigure a short green lawn; but now the sheddings and blowings from the ever-

greens are, if anything, worse. But there are few great advantages, but have some countervailing disadvantages; and if it were not so, "our occupation would be gone." A part of the lawn beginning to be dotted with Plantain-heads, &c.; and as it was too short for sending the scythe or machine over it, which might have made it rusty, we drew the double-edge long-handled knife over it, so as to give it an even green appearance. For such a purpose and knocking the heads off Daisies and other flowers that will sometimes appear on the best lawns, this knife is the best thing that has come in my way. It was described in a late Number.

Used Green's machine freely where there was no danger of browning or burning, working the twenty-two-inch one with two men, each holding and pulling by turns. Some of my friends say one man ought to do it. All I can say, they may do it for me and welcome. It is work quite hard enough for two men if they keep at it and work sharp, and I am sure that two men when the grass is not too long, will mow as much as would require seven at least to do under the most favourable circumstances with scythes and brooms. However, all lawns are the better for being ground by the scythe now and then, and rough places with uneven ground are not fit for the machine.

I notice what Mr. Green says in a late Number as to the terms on which he will supply new wheel and improved chain to the old machines sent to him, if before Christmas, and think them reasonable and honourable. I will see how we get on, as since the removal of another link the machine works well, even though a few of the circular pieces of the links have dropped out. I cannot let the wheel-and-racket ones, with their constant clattering go near the living-rooms.

Re-potted a few of last year's Chinese Primroses, and a great number of this summer's sowing, taking them from small 60-pots, and giving them 48's, and placing them on boards behind a trellis of trees, so as to be shaded from the south sun. Divided plants of *Cinerarias* that had been turned out into a border, and potted a number of seedlings and set them in any frame to be kept shaded for a time. Will repot a good number now established in 60-pots, as soon as we can get at them; with plenty of water and a cool bottom they will now grow with great luxuriance, and pretty well set all insects, as fly and thrips, at defiance. However, if any appear, it may be as well to give a little smoke of tobacco, taking care that however given the smoke shall be cool. Treated hard-wooded plants with plenty of air as recommended last week.

CUTTINGS.

Put in cuttings of a few *Verbenas*, *Maurandias*, *Petunias*, and the smaller kinds of bedding *Geraniums*, as *alba floribunda*, *Prince of Orange*, *Citriodora*, *Rouge et Noir*, *Diadematus*, &c. These strike best in spring, but they, and all the *Diadematum* breeds, do so pretty well now. Put in also a few of the different kinds of *Heliotropes*, to be followed by others. We used 48 and 60-pots for these, using fresh soil from the highway, with a fair portion of drift sand, after filling the pots one-third with drainage, and topping all with a sprinkling of silver sand. In the larger-sized pots if the cuttings were small, we place two rows round, leaving an open space in the middle for watering, so as to avoid damping in dull weather. In the smaller pots, we put a row thickly on the outside, with the heads leaning inwards, so that the pots may stand close before they are struck. In selecting cuttings we prefer small stiff side pieces, about 2 inches or a little more in length. After cutting these clean across at their base, we remove fully three-fourths of the leaves, but leaving a few small ones at the point. We do this, because the close atmosphere, to keep such leaves healthy and fresh, would be apt to produce damp, and because by thus curtailing the perspiring surface we can give more light and air to the cuttings than they otherwise would stand. For all such cuttings we prefer a cold pit or a cold frame, so deep that the pots shall be from 18 inches to 24 inches from the glass. The cuttings are watered when inserted. Even the first night there is a little air left on the frame, for reasons often given. Next morning before the sun begins to flag the cuttings the air is taken away, and most likely if promising to be sunny a slight sprinkling is given from the syringe or a very fine rose, just to moisten the leaves. So long as the cuttings hold up their heads manfully no shading is given. At that distance from the glass they will stand a little sun; but the cuttings must show no signs of distress. Our maxim is, "Never let a cutting flag." Whenever the least sign of that appears, give shade; but keep it on not one moment more in

the afternoon than is necessary. The cuttings may be dewed about four o'clock again, or even at mid-day if the sun is powerful and the shade rather thin, and air again admitted all night, unless very boisterous indeed. When struck, set out or give more air still. From want of space I must have plants small in winter; but, small or large, their keeping depends on being well hardened off before the winter comes. They will grow fast enough after March. Where there is plenty of room, the young plants may be large if well hardened. In such cases propagation may commence earlier.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications.

We cannot reply privately to any communication unless under very special circumstances.

HOW TO FARM TWO ACRES (*Arthur Young*).—The directions are applicable whether the cultivator is the owner or only a tenant. The author has no time to devote to answering private letters. Any inquiry can be replied to through our columns.

PRINCIPAL GARDENS OF GREAT BRITAIN (*A Gardener*).—There is no work devoted to describing them. Almost every Volume of *THE COTTAGE GARDENER*, both of the first and present series, contains some such descriptions.

FOREKNOWING THE COLOUR OF WALLFLOWER SEEDLINGS (*T. Lambert*).—The darkness of the leaves is not associated with darkness of the flowers. No one can foretell the colour, nor ascertain it until the seedlings are in flower-bud. Then, by cutting across a bud, you can perceive the colour of the future petals.

DRYING FLOWERS (*H. D.*).—We know of no mode of drying flowers without injuring the brilliancy of their tints. A German exhibited some so dried last year at the Crystal Palace, but his process was kept secret. He met with no encouragement, and has returned to Germany, we believe.

CLUB-ROOT (*Rusticus*).—You are quite misled in attributing it to the wireworm. The excrements contain the grubs of a weevil.

ASPECT FOR KITCHEN GARDEN CROPS (*C. W.*).—To promote earliness let the rows range north and south; to prolong production in Peas, &c., east and west. If the garden is on the side of a declivity, we have the rows across it, for the sake of retaining liquid manure to their roots in shallow trenches. This we consider of more importance than any small difference in the exposure to sunshine. Accidentally we did not receive your note in time to answer the query about Verbena showing.

NEAL'S APHIS PASTILS.—*W. C.* had better apply to the nearest respectable seedsman. Mr. Neal has appointed agents almost everywhere.

PARSLEY DYING (*A Cheshire Subscriber*).—On a light soil, such as you describe, Parsley is very liable to a disease called canker by gardeners. It is an ulceration which eats through the plant near to where the root and stem unite. Clay and limy rubbish mixed with the soil in sufficient quantity to render its staple more retentive of moisture, will prevent the recurrence of the evil. The same lightness of soil causes your Cauliflowers to button, and the same remedy would be effectual. Give both the Parsley and the Cauliflowers an abundance of liquid manure.

SHANKS' MOWING MACHINE (*W. S.*).—Write to Mr. Shanks for directions how to sharpen it, if the general directions we published some time since are not sufficient.

TROPÆOLUM CUTTINGS (*An Irish Subscriber*).—Tom Thumb Tropæolum, in general, comes pretty true from seed, but no cuttings are easier to strike than of that. Drain a number of four-inch or five-inch pots, and fill them then with very sandy loam, with half an inch of sand on the top. Select little side-shoots, 2 inches or 3 inches long for cuttings. Remove all the leaves except one or two little things at the point, lay them down in a shady place, the root ends exposed, and the tops kept damp with a little moss or damp paper. In a few hours insert them thickly round the sides of the pot, and place them in a cold frame or pit. If room is short they may stand in the same pots all the winter, and the reason of placing them round the sides is, that you can water the soil without wetting the succulent stems in winter. A few such pots will furnish you with plenty more of cuttings in the spring. Some two or three years ago we soon changed a stock of half a dozen into 500 or 600.

LAZANIA SPLENDENS (*E. M. Sandymount*).—We have rooted many of splendens and of rigens last June and July from cuttings in the open air, but shaded the first week. The soil is yet warm enough for this work, but time is to be lost.

SPRING SOWING LOBELIA SPECIOSA (*Idem*).—If you save your own seeds of any of the varieties of blue Lobelias they will come true from those seeds, and will come up well and abundantly if you sow them in February, March, or April in the open air; but then it would be past Midsummer before they were large enough to handle, and, except gracilis, it would be nearly past August before they would do any good in the flower garden.

WORK ON KITCHEN GARDENING (*Inquirer*).—For the price you name, there is none better than *The Cottage Gardeners' Dictionary*. You can have it from our office for 5s. 4d.

PRESERVING BEANS AND PEAS FOR WINTER USE (*J. Z.*).—If you will purchase No. 350 of our first series you will find full directions. They are too long to extract.

DIELYTRA SPECTABILIS AFTER FLOWERING (*L.*).—After flowering the plants should be hardened a little under some shelter, and then be planted out in rich light soil, such as Phloxes like best. In strong wet soil it makes too much top growth. If the plants are large it is a good plan to divide the balls with a knife, and make each into four parts, and cutting off the tops, then water, and all is right.

PROPAGATING VARIEGATED ARABIS (*Idem*).—October and November are the best months to divide Variegated Arabis, and then every little morsel with a root to it will make a capital edging-plant the following season; and every morsel of it that has not then got a root will do just as well as if it had, for it will root through the winter under a hand-glass, just as other plants do in summer. It will also force from November to May into new shoots, and every two inches of it will root like Verbenas all through the winter.

VARIEGATED ALMA (*E. B.*).—You sent the plain white leaf of a sport from Alma Variegated Geranium in a sticking-plaster instead of in a filmy oilskin, or in prepared silk in oil, which is a better material. The sticking-plaster and the plain white leaf were all in one mass of stickiness, that no invention could unfold or separate them. Almost all, if not all, variegated Geraniums and other variegated plants make clean white sports occasionally. The same occurs in all our annual batches of seedlings. We had over a score of them this very season. We call them albinos, and give them a chance for their lives; but, like the sport shoots of pure white, they are of no practical use, as no one can make any use of them. Just at this time we have an example of one of the most extraordinary white sports we ever heard of, and we are passing it through a strange ordeal, which may or may not reveal something worth talking about. Some of them are "excessively pretty," as you say; but excess of beauty is not just the right sort of sport to put under experiments of propagation, and you need think no more of yours, for they are of no use at all except for one year or season. Variegated Alyssum and Arabis and Mangles are never free from them in such rich soil as your garden is, so that the better the soil the more manifest is the disease.

MELON CULTURE (*Cucumis Melo*).—We think that you must have seen just what suited you not long ago. However, we will epitomise to meet your case. Your pit will answer admirably. The flue will answer for the purpose if strong enough. If you take it all round the pit, 10 feet or so from the furnace should be brick on bed—in fact, but for the expense, we would have most of the front flue brick on bed, and the rest brick on edge, and covered with the twelve-inch tiles. Over the flue you may make a bed of clinkers and gravel for your pots; but the pots will do admirably set upon the top of the flue with a thin tile on each side of the pot to prevent the bottom of the pot being too hot. When growing set evaporating-pans on the flue. The trellis would be better at 15 inches or 16 inches from the glass instead of 12 inches. A good size of pots is 15 inches, but 12 inches or 18 inches will do, the former for small kinds, the latter for large ones. Sow the seeds in the usual way. Pot off singly, nip out the point when the plant has three or four rough leaves, train them to one stem, nipping out all others as soon as you can see them in the axils of the leaves. When a nice plant in a four-inch or six-inch pot, and before being matted in the roots, transfer at once to the large pot using chiefly strong loamy soil. Train the shoots, nipping out all the buds from the axils of the leaves for 2 feet or more, but preserving the large leaves. Stop the shoots when 3 feet or more long, and allow the laterals then to come, and stop above the fruit, and set and treat in the usual way.

FRUIT TREES FOR WEST AND EAST WALLS (*South Hants*).—You state neither the length nor height of your walls. On the west we would place Noblesse, Royal George, and Barrington Peaches; Elruge and Violette Hâtive Nectarines; and Moorpark Apricots. On the east wall such Cherries as Elton; Circassian Plums, as Coe's Golden Drop, Jefferson's, and Washington; and if room such Pears as Marie Louise and Seckle; but we can give no determinate advice under the circumstances, as your wall may be 10 yards or 100 yards long, and near London or near Inverness.

ROLLER SHADES FOR GREENHOUSE (*Sunshade, Dublin*).—We do not think a sketch necessary. The simplest mode for a house—say 20 feet to 30 feet long, is to fix the shading-cloth firmly by tacks to the apex of the roof on one side, and to a round roller from 2 inches to 2½ inches diameter at the front. The end of that roller to have a groove, or wheel with groove, beyond the house, to contain a yard or two more of rope than double the width of the roof. There should be a stout nail or pin to fasten the rope to. You may have a pulley-wheel at the apex opposite the wheel through which the rope works. When you pull the rope the strain will cause the roller to mount the roof and take the blind rolled up on it with it. It will do very well without any pulley-wheel however, and with less rope, by wrapping more than the width round the groove at the end of the roller when down, by pulling the end at the bottom the roller must run up the roof. When the house is much longer—say double or more, the best plan is to have such a pulley at each end, and one in the middle, but the middle one fastened at the apex, brought down under the blind, taken over the roller and up to a pulley at the apex, and the end brought down again within reach of the two end cords, are taken over a pulley-wheel at the apex, and are then taken along the apex of the roof to the centre, and each passed over another pulley-wheel there, and the ends brought down to the front. It is evident that one person may pull all the cords that will move the whole roller at once. The first for houses of moderate size is the simplest. When fastened to the roof, and you apply the strain to the blind, the roller must turn round and rise, and you can fasten it where you like by means of the rope going round a pin. This mode of shading is, however, expensive, strong blinds seldom lasting long. We have frequently alluded to size and a little whitening, a d also to the blinds fastened inside with rings; but the outside ones are very handy where expense is no object.

SIZE OF BOILER (*A Subscriber*).—The surface exposed to the fire is the only circumstance in its size that can serve as a guide for ascertaining whether it is sufficient for heating a known length of piping. For your 250 feet of four-inch pipe, 51 square feet of the bottom of the boiler ought to be exposed to the fire.

HEAS AND DIANTHUSES (R. F. S.).—Humeas, like Wheat and Barley, and seed, which finishes their course; then they are cut down, and a crop of them is reared from seeds. But Humeas take six or eight longer from the sowing to the flowering, so that the seed has to be sown yearly in April, while the Wheat need not be put in till the following October or November. All the new Dianthus-like the same soil as set Williams—that is, any moderately rich, friable, garden soil. The soil as for Lettuce or early Radishes, and that on the farm which he best Barley would suit all the garden Dianthus.

HILL HAMBURGH GRAPE (J. B.).—Our opinion of the Mill-hill grape is—and we have grown it for some years—that, if cultivated at-rate gardener with ample means at his command, it is just as the old Hamburgh, but not better in any one point save the size of the fruit. We would never recommend the Mill-hill Hamburgh to any one who is not a first-rate Grape grower.

THE ROSE (Idem).—The best pillar Rose for a villa garden is difficult to find; but there is none better than Général Jacquemont, and suppose a two or three-year-old plant worked on any stock quite close to the ground. Then suppose we admit that Mr. Rivers made the best of all his pillar Roses when he found out that, by burying the budded or grafted earth at the time of planting, the Rose ultimately rooted for itself, and that so Roses of all sorts, as pillar Roses, are enabled eventually on their own roots to make beautiful heads. There are two beautiful newish names to two pillar Roses—Anna Alexief and Anna de Diesbach, and the latter it would be difficult to choose between them. Then there is the Rose de Chabrilant; and where was a better pillar Rose ever to say nothing of such charming pillar Roses as the Duchess of Devonshire, Queen Victoria, General Simpson, Oriflamme de St. Louis, and so many more. Mademoiselles as would fill a long avenue with beauty, and with harmony and delicious odour.

THE APPLE (Shaw and Crossland).—Your seedling Apple is not ready for use, and hence we cannot form any judgment upon it, again when ripe, and send the best specimen you have. It is no use to us if it grows as large again; let us see it.

THE GERANIUMS (J. B.).—GERANIUM AND PETUNIA CUTTINGS (Kent).—The Geraniums instead of being watered should have been taken up, the foliage decayed, cleaned and dried in the shade, and then in drawers or bags, and planted either at the end of October, beginning of February. The Nutmeg and most of the sweet Geraniums strike most freely in spring, in a little bottom heat. Select some short side shoot 2 inches to 2½ inches long, cut the base, take off fully half the leaves, and insert five or six round ends of a four-inch pot half filled with drainage, and then an inch of peaty loam and silver sand on the top. A close, cold frame or a light is the place for them, keeping close and the floor of the frame moist during the day, and shading in very bright sun, and air on at night by tilting the glass half an inch. The Petunias to be potted separately in three-inch pots, or potted four round ends of a five-inch pot. We prefer the first where there is room. If sown now so well with Petunias, there will be no fear of success in Geraniums. You write very well, but if you are a young man, we advise you to avoid flourishes in writing, and capital letters here; you see such introduced in print. We have twisted the last four lines of your letter, and yet cannot make it out. So if there is any more, we have not noticed write again.

THE FUCHSIA (J. B.).—The leaves of your Fuchsia were not dried when they reached us, but of one colour, though not the true red. They were as all the young leaves of Tom Thumb Geraniums at first early in the spring—that is, a pale yellowish-green; or else you prepared the leaves to come by pot makes them look soiled, and they were in some kind of oil which preserved them remarkably fresh, and they were as plump and fresh in a common letter as if they had been up in oiled silk.

THE GIGANTEA BRANCHES DECAYING (R. S. F.).—Some of the enclosed may have been injured by last winter's severity; but some decayed naturally. We fear that it is natural for the lower part of this Conifer to die early. All the parent trees in California are without branches for more than half their length.

THE PILIFERA—LOBELIA SPECIOSA (An Amateur).—Your bank is too moist; but even if it were a stiff clay the *Spergularia pilifera* on clothe it, and without the clay pilifera would have behaved in the same way. On the level ground our own native *Spergularia ulmaria* are all the better for light land than pilifera. *Lobelia* comes perfectly true from seeds; but all kinds of *Lobelia* have lost spring for speciosa.

HOUSE FERNS FOR TABLE DECORATION (E. C.).—The following are all suitable for introducing on the dinner table, for room ornaments, for nosegays, and hanging-baskets. They are easy managed, and not expensive:—*Adiantum assimile*, *cuneatum*, *nodosum*; *Asplenium odontites*, and *viviparum*, or *Fennel Fern*; *Polka*; *Cheilanthes elegans*, *micromera*, and *spectabilis*, great; *Doodia aspera* and *caudata*; *Lustrica pubescens*; *Nephrodium platyneuron*, *atro-purpureum*, *calomelanos*, and *ternifolia*—three of the last under candle or gas-light; also *Polydium falcata*, and *rotundifolium* *Polypodium effusum*. *Poinsettias* require a stove.

PUTTING A PASTURE INTO A GARDEN (T. C.).—From all the portion to be taken by the kitchen garden and orchard we should strip off the turf stack it, and let it decay in the heap; then remove to one side all the surface soil; then pare and burn 9 inches in depth of the clayey and underdrain the entire plot. The decayed turf, burnt clay, will form an excellent soil. If this is all done now, then you cut all your trees in October, and save a year. Spring planting should be avoided, if possible. Leave the turf, if it is good, where it is, and have a lawn. But the portions to be used as flower-beds should be served as we have directed for the orchard, &c.

OF FRUIT (W. H. Hodges).—Your Apple with the fine bloom appears to be Red Astrachan. The other which is pale and smooth is not ripe and not known.

OF PLANTS (W. X. W.).—It is *Calluna vulgaris*, the common heath, of which must have been mixed in the peat soil used for (A/pha).—Merely *Cystopteris fragilis* in a reduced form.

(X. Y.).—Your plant being succulent was nearly reduced to a pulp in the post-office; it appears to be *Boussingaultia baselloides*. (W. C. C.).—1, *Athyrium filix-femina*; 2, *Calcus palustris*; 3, *Centaurea nigra*; 4, *Chrysanthemum segetum*; 5, out of flower, but appears like a *Micromeria*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CRYSTAL PALACE POULTRY SHOW.

THIS Show of chickens of 1861 commenced yesterday and will continue until the 29th. We give a list of the prizetakers, but must reserve our report until next week.

SPANISH.—First, J. R. Rodbard. Second, J. Martin. Third, J. K. Fowler.

SPANISH.—First and Second, J. R. Rodbard.

SPANISH COCKS.—First, R. Wright. Second, J. K. Fowler. Third, J. Weston.

DORKING (Coloured).—First, Hon. W. W. Vernon. Second, J. Lewry. Third, E. H. Garrard. Fourth, J. Frost.

DORKING.—First, J. Lewry. Second, Mrs. F. Blair.

DORKING (White).—First, H. Lingwood. Second, Rev. G. F. Hodson.

DORKING COCKS (Coloured and White).—First, Capt. W. W. Hornby, R.N. Second, J. Lewry. Third, Lady J. Cornwallis.

COCHIN-CHINA (Cinnamon and Buff).—First and Third, J. W. Kelleway. Second, S. Statham.

COCHIN-CHINA (Brown and Partridge-feathered).—First, Miss V. W. Musgrove. Second, P. Cartwright. Third, E. Tudman.

COCHIN-CHINA (White).—First, W. Dawson, (Hopton). Second, A. E. Smith.

COCHIN-CHINA COCKS (Coloured and White).—First, J. W. Kelleway. Second, Miss V. W. Musgrove.

BRAMA POOTRA.—First, Lady L. Thynne. Second, J. K. Fowler.

BRAMA POOTRA COCKS.—First, Mrs. F. Blair. Second, withheld.

GAME FOWL (White and Piles).—First, R. R. Clayton. Second, G. Croft. Third, J. Monsey.

GAME FOWL (Black-breasted Reds).—First, H. Horton. Second, J. Heath. Third, S. Matthew.

GAME FOWL (Brown-breasted and other Reds, except Black-breasted).—First, J. Fletcher. Second, J. H. Cuff. Third, E. Archer.

GAME FOWL (Duckwings and other Greys and Blues).—First, Hon. W. W. Vernon. Second, P. Mason. Third, A. Guy.

GAME FOWL (Blacks and any other variety).—Messrs. Noble & Ineson. Second, J. Fletcher.

GAME COCKS.—First and second, J. Fletcher. Third, E. Archer.

HAMBURGH (Gold-pencilled).—First and Third, J. Munn. Second, A. E. Smith.

HAMBURGH (Silver-pencilled).—First, J. Martin. Second, Master E. E. Keable. Third, J. Munn.

HAMBURGH COCKS (Gold and Silver-pencilled).—First, R. Oxley. Second, J. Munn.

HAMBURGH (Gold-spangled).—First, G. Brook. Second, S. H. Hyde. Third, H. Carter.

HAMBURGH (Silver-spangled).—First, Lady J. Cornwallis. Second, W. Wood. Third, J. Robinson.

HAMBURGH COCKS (Gold or Silver-spangled).—First, Mrs. Beardmore. Second, S. H. Hyde.

POLANDS (Black with White Crests).—First, T. P. Edwards. Second, Messrs. Hepworth & Coldwell.

POLANDS (Gold).—First, withheld. Second, A. E. Smith.

POLANDS (Silver).—First and Second, G. C. Adkins.

POLAND COCKS.—First and Second, G. C. Adkins.

MALAY.—First and Second, N. Sykes, jun.

ANY OTHER DISTINCT BREED.—First, W. Dawson, Hopton. Second, T. Walton. Third and Fourth withheld.

GOLD-LACED BANTAMS.—First, T. H. D. Bayly. Second, Miss E. Hodson.

SILVER-LACED BANTAMS.—First and Second, T. H. D. Bayly.

BANTAMS (white, clean legs).—First, T. H. D. Bayly. Second, F. Hardy.

BANTAMS (Black).—Prize, E. Hutton.

BANTAMS (Game).—First, T. H. D. Bayly. Second, F. Angel.

BANTAMS (any other variety).—First and Second, Rev. P. W. Story.

DUCKS (Aylesbury).—First and Second, Mrs. Seamons.

DUCKS (Rouen).—First, Mrs. F. Blair. Second, Mrs. H. Fookes.

DUCKS (Black).—First, C. Ballance. Second, G. S. Sainsbury.

DUCKS (any other variety).—First, T. H. D. Bayly. Second, C. Baker.

GRESK (White).—First and Second, W. Mansfield, jun.

GRESK (Grey and Mottled).—First, Mrs. F. Blair. Second, Mrs. Seamons.

TURKEYS.—Prize, Rev. T. L. Feliows.

ORNAMENTAL WATER FOWL.—First, T. H. D. Bayly. Second, C. Baker. Third, Marchioness of Winchester.

PHEASANTS (any new variety).—Prize, M. Leno, jun.

GUINEA FOWLS.—Prize, H. P. Benett.

PIGEONS.

POWTERS OR CROPPERS (Cocks of any colour).—First, J. Paton. Second, E. L. Corker. Third, T. H. Evans.

POWTERS OR CROPPERS (Hens of any colour).—First, E. L. Corker. Second and Third, T. H. Evans.

CARRIERS (Cock, Black and Dun).—First, J. Parkes. Second, E. L. Corker. Third, Major F. C. Hassard, R.E.

CARRIERS (Cocks of any other colour).—First, J. Ford. Second, Major F. C. Hassard, R.E.

CARRIERS (Hens, Black and Dun).—First, P. Goss. Second, Major F. C. Hassard, R.E. Third, J. F. Mortimer.

CARRIERS (Hens of any other colour).—First, Major F. C. Hassard, R.E. Second, F. Esquillant.

DRAGONS (Blue).—Prize, R. J. Morley.

DRAGONS (any other colour).—Prize, F. G. Stevens.

ALMOND TUMBLERS.—First, F. L. Corker. Second, F. Esquillant. Third, J. Percival.

SHORT-FACED MOTTLES.—Prize, F. Esquillant.

SHORT-FACED BALDHEADS.—First, J. W. Edge. Second, F. Esquillant.

SHORT-FACED BEARDS.—First, E. Archer, jun. Second, H. Bunce.

SHORT-FACED TUMBLERS (Self colour).—First, R. Fulton. Second, W. H. C. Oates.

JACOBINES.—First, F. G. Stevens. Second, A. G. Brooke.

OWLS (Blue or Silver).—Prize, F. G. Stevens.

OWLS (Yellow, or any other colour).—Prize, H. Morris.

NUNS.—First, A. G. Brooke. Second, withheld.

TURBITE.—First, G. Goore. Second, J. Percival. Third, F. G. Stevens.

FANTAILS (White).—Prize, C. Allison.

BARBS (Black).—Prize, G. Goore.

BARBS (Yellow, or any other colour).—First, J. H. Craigie.

MAGPIES.—First, E. L. Corker. Second, S. Willis. Third, H. Morris.

TRUMPETERS (Black Mottled).—Prize, withheld.

TRUMPETERS (White, or any other colour).—Prize, F. Key.

SPANISH AND LEHORN RUNTS.—First, F. Key. Second, T. D. Green.

ANY OTHER VARIETY.—First, A. G. Brooke. Second, A. Crossman. Third, F. Smith, jun. Fourth, H. Morris.

RABBITS.

FOR LONGEST EARS.—First, C. King. Second, W. S. Roffey.

BLACK AND WHITE.—First, R. Hawksley. Second, T. Goodall, jun.

YELLOW AND WHITE.—First, C. Sellen. Second, J. Quick.

TORTOISESHELL.—First, J. Morris, jun. Second, T. Durbridge.

BLUE AND WHITE.—First, W. Griffin. Second, Messrs. Guest & Coleman.

GREY AND WHITE.—First, R. Cook. Second, J. Croft.

SELF COLOUR.—First and Second, J. Hincks, jun.

FOR WEIGHT.—First, W. Martin. Second, G. Jones.

FOREIGN RABBITS.—First, Miss K. Baily. Second, C. L. Sutherland.

Judges of *Poultry*, Messrs. Baily and Hewitt; of *Pigeons*, Messrs. Bellamy and Cottle; of *Rabbits*, Messrs. Bancks, Fox, and Webster.

MORE ABOUT THE POULTRY DEATHS.

In reading over the list of victims at the late Poultry Show at Sheffield, I see none so unfortunate as myself. The losses enumerated in your paper are confined to a single bird in each pen; whereas, all my three prize birds in Pen 61 died a few days after their return from the Show. They came back with their combs perfectly black, and with an intense thirst upon them, and after lingering a couple of days the cockerel and one of the pullets died, and the other pullet expired two days after.

I wrote to Mr. Dawson as soon as I had seen them, to complain of the sad condition in which they were sent back, to which letter he civilly replied; but of my report of their deaths he has taken no notice.

It is the more annoying, as these birds were entered at the Crystal Palace, where, as you had reported them in your last week's paper, as "far a-head of all their rivals" at Sheffield, I might have looked for further success.

I had a pen of old birds at Sheffield which returned in perfect health.—JOHN F. NEWTON, *Kirby-in-Cleveland, Yorkshire.*

I AM truly glad to see that you have taken notice of the mysterious deaths at the Sheffield Show; though certainly I should not have taken any public notice of it myself unless some one else had done so first, as my loss was small compared to some others, though there is no doubt it was the drake out of my best pen, and one which I have not the least doubt would have appeared in the prize list. In your remarks I entirely concur; and that my drake died from no ordinary cause I am and always have been fully convinced, and, in fact, wrote to the Secretary immediately after the Show to that effect; and I think under all circumstances that it is a pity that the Committee, instead of giving all these dead birds to the unfortunate owners to give them every opportunity of using all means to ascertain the cause of death, should have kept them all.

A notable feature in the case appeared to be the fact that the birds had been in the water before they were sent to the Show, and I thought it probable that they had been in the water before they were sent to the Show, and I thought it probable that they had been in the water before they were sent to the Show.

perfect health and condition. Let "SELIM" come out in his own name and tell us all he knows, and I am mistaken if he would not put us in the track to trace this mysterious affair to the fountain head. I most earnestly hope we may be able to do so, and for one shall be most happy to do anything in my power to attain that object.—G. SAUNDERS SAINSBURY, *Rowde, Devizes.*

DRESSING FOWLS FOR EXHIBITION.

WILL you inform me if I could have anything done to the face of a Spanish cock in the way of reducing the fulness of the crests, or folds of white, without disqualifying him for exhibition? He is a young bird of very high breed, and I have great hopes of him; but unless something can be done I fear very soon he will not be able to see to feed.

I think it my duty to ask you to warn intending exhibitors of poultry through the medium of your valuable Journal; also to apprise judges at shows, that certain notable exhibitors are base enough to prepare the faces of Spanish by colouring them white, and with stitching fresh combs on cocks, and inserting false tail-feathers to the same. I am prepared to substantiate my statement, some friends having suffered by these acts more than once.—T. B.

[There is nothing you can do without running the risk of injuring the bird's face by causing redness. If there is danger of his eyes being shut up by his face, we advise you to draw down that which threatens most on each side, and to fasten it with adhesive plaster of some sort. After some time it may be removed, and it will be effectual. When removed, it must be done by soaking—there must be no force used.]

REMINISCENCES OF A GAMEKEEPER.

(Continued from page 408.)

It was said, and I believe with perfect truth, that he never undressed. He lived in a place half barn, half wood-house, with no window, but one made of laths, and sufficiently high to be used for ventilation without exposing the inmates to draught. His apartment was rather spacious than otherwise, having an open fireplace at one end, and a couch of straw at the other. It was not his habit to sell much of his game. I believe never, except when he stood in need of some article of dress, or when his supply of tobacco was exhausted. His landlady lighted his fire in his absence, and on his return his game, always Hare or Rabbit, was skinned, cut into joints, and cooked. Then master and dogs dined together, and the discipline observed here was just as strict as when hunting. A good study for Landseer to look through that literally latticed window. The scene lighted by the fire only. A thin worn man eating from a tin vessel constantly replenished from the pot that hangs over the fire, and surrounded by five lurcher dogs, each waiting his turn quietly, and when the meal is over all curling up in the straw for their rest. Tomline was a day poacher. These two were specimens of many of the same class, fostered by a large extent of common land. They are mostly stout fellows, and walk about with their hands in their pockets. They never work, and there are few things in moderation that the long velveteen coat would not hold or cover. I must ask pardon for this long digression, but I have a weakness for the heath country, where I began my career, and have dwelt upon it.

It was after I had lived a year or two with my young master, that late in the season we drove out a large covey of birds. My master had been shooting very badly all the morning, and I was anxious to show him sport. But in November, the birds, so far as cunning and wildness are concerned, are all old ones. The unaccustomed eye soon loses sight of them in a long flight, and the practised has difficulty in following them. It is a fine study for those who wish to find out the invisible colours. The brown of the fading heath, and the back of a Partridge are the same colour. But it is not only difficult to mark birds for that reason, but there is another—and that is, they get out of sight without settling in the heath. When they have flown over the highest part of the waste or common, they will skim without moving their wings for 200 yards so low as nearly to touch the tops of the heather. They are seeking where to alight, and having pitched on an open space, a ride or footpath, they set off running directly.

Whether the birds I bought in the heath, or whether they were the same as those I bought in the heath, I cannot say.

master so. I led to the spot, but the dogs touched on nothing, and a man turf cutting said no birds had settled there. My master said he did not believe there were; and I said I was sure there were. He said many sharp things, and in very few minutes it was settled I should leave him. I would have sworn the birds passed the spot where we were, and I walked out in a straight line. The dogs followed, and within 300 yards one was standing, the other backing. "Look, sir," said I triumphantly. Had he answered cheerfully, I should have passed my life in his service; but instead of that he walked silently and moodily to the dogs. The birds all got up singly, and he killed them all. I knew that he was pleased, but he would not show it; the fact was, he knew he was wrong. It was the last time I went out with him.

My next place was with a man who had made an immense fortune, and who thought sporting part of a gentleman's life. I was recommended to him, and waited on him at his seat. I had never seen anything so splendid; he was proud of his wealth, and did not hesitate to spend large sums on anything that was seen, and that spoke of his riches; but all that was out of sight paid for it. He was a tall thin man with heavy brows, and whether standing or sitting his eyes were always on you while he was speaking, and his hands in his pockets toyed with his dear money.

"So, you are the keeper! it appears to me the expense of such a man as you are is enormous. What can you do to earn the money you cost? What are your duties?"

I explained as briefly as I could, but he soon stopped me. "You misunderstand me," said he, "you are getting deeper into expenses, and I am anxious to lessen them. Game is saleable, is it not? Well, then, will the Pheasants when killed make as much as they have cost?" I told him not more than half. I believe he would have given me up at once, had not his lady entered the room and told him these expenses were necessary. I had such a lecture after he had engaged me. He was not sure he had done aright in engaging such a man as I was, he thought a cheaper man would spend less money; and then did I find my own guns, dogs, and powder and shot? What guarantee could I give that after all this outlay there should be plenty of game? Would it be for this year only, or would it be annual? He would not have new things, fools had guns made, and they bred dogs; but sharper fellows with money in their pockets bought them, and so would he. I ventured to say something about a gentleman. This roused my master. "Don't talk to me, about your gentlemen, I am one. What makes one? But, mind, I won't be treated as one, as you understand it. You will persuade yourself you don't treat me well unless you rob me. Now, look here! the man I bought this place of could go back from father to son 300 years in possession. By dint of being treated as gentlemen, they became servants. I am a gentleman, and will be one in everything but spending money." I was about to speak, when he said, "Nay, nay, hold your tongue, I must have my man of business here."

I liked the heath country and master better than the trader.

THE NEW AILANTUS SILKWORM.

MANY of our readers may be aware that there has recently been introduced to France a new species of silkworm, which promises to rival, if not supersede, that which has been so long the sole produce of all the silk of commerce. Unlike the old species, which is known to be of delicate and tender constitution, and has of late been subject to a disease which has produced great mortality in the silk-producing districts, the Ailantus worm is said to be very much more hardy and more easy of cultivation. Some months ago we had numerous inquiries about this new entomological introduction, and several of our readers were successful in becoming possessed of some of the eggs, but until now we have been totally ignorant of the result of any experiment that has been made in rearing the worms. It is to Lady Dorothy Neville, of Dangstein, that the great merit is due for being the first to make known the perfect success of this hardy species of silkworm in this country. From this, the first attempt of Lady Dorothy's, we entertain high hopes that this will become not only a pleasing but a profitable pursuit.

Experience will, doubtless, bring out many points in the management which have yet to be discovered; but there can be little doubt that from the following communication of Lady Dorothy's there is great encouragement to persevere in the work.

"I am very much pleased with my worm success, and I have

no hesitation in saying the worms might be hatched and brought up to their end by the commonest persons, and without the slightest care after they are placed on the leaves.

"We made a mistake in having standard Ailantus trees growing too far from each other. The poor worms descended the stems in order to find food, and perished on the ground; whereas, were the trees planted like our copsees, the worms could go from one to another without risk. I am certain that, in consequence of the little food (for we had to put them on Cabbages which they ate very little of) they spun prematurely, and thus their cocoons are not so big as under favourable circumstances they would have been. I send you two as specimens. Next year I shall (D.V.) set about this new experiment in earnest. The worms themselves are most beautiful; very like the Sphinx (*Bombyx*) *ligustri*, of a bright emerald green with turquoise blue spikes."

We shall be most happy to receive any further information on this important subject; and we and the public are certainly much indebted to Lady Dorothy Neville for the disinterested publicity she has given to her experiment, which will serve both as information and a stimulus to others to prosecute what may yet prove to be an important branch of industry. These insects are perfectly hardy, and have only to be placed on the trees where they take care of themselves. Birds do not appear to touch them.

THE CANARY AND THE BRITISH FINCHES.

(Continued from page 412.)

5.—THE SNOW BUNTING (*Emberiza nivalis*).

French, Ortolan aëige.

German, Schneeammer.

THE Snow Bunting or Snowflake is only a winter visitant to this country, and I am not aware that it has ever been known to breed in England, though perhaps it may in the north of Scotland. The change of plumage incident to age and sex has given rise to various names, as Tawny and Mountain Bunting, and from the length of the hind claw it has sometimes been called Snow Lark. It is, however, a true Bunting, as may be seen by the formation of the beak and the palatal knob; and though they will eat seeds and corn, yet like the other species of the Bunting tribe prefer insects.

Bechstein well describes their general plumage—"The head, neck, and whole of the under parts of the body are white, the head occasionally sprinkled with some yellowish-brown colour; the upper and lower back, the shoulders, and the tail-covert are black, bordered, the black feathers with white, the shoulder feathers and the larger tail-coverts with liver colour, so that the black on each of the back and shoulder-feathers appears triangular; the primary wing-feathers or flight half white, the tips being black, the secondaries white, the first and second having a small black streak at the point, and the last three black with reddish-brown borders; the primary covert-feathers black, the others white, except those that overlay the three black wing-feathers, which like those are black and edged with reddish-brown. The tail is forked, the three outer feathers of which are white with a black stripe on the outer vane, the next black being only white at the base, the two centre black edged with grey or reddish-white.

"The female is a little smaller, the head and upper neck white mixed with yellowish-brown, and across the white breast runs a broken band of the same coloured spots."

My bird was caught near Canterbury. It was about the size of a Yellowhammer, the colour being much like that of the common Bunting, but being much intermixed with white. I never heard it sing, and believe it to have been a hen. A correspondent in a contemporary writing from Edinburgh says—"I had a pair of Snow Buntings which I kept in my bedroom, as they disturbed the other birds at night. In the daytime they sat very quiet in a dark corner of the cage; at night they became all activity, fed, played with each other, and sung till past midnight. Their song was a low, sweet, prolonged cry or chime, as if talking to each other. I used to lie awake for hours and listen to them. A pale light from the moon shining through the window-blind seemed to please them greatly."

Bechstein also notices their nocturnal habits. He says, "It is an unquiet bird, and if kept in a room also hops about at night; it sings in the same manner as the Yellowhammer but faster, and runs fast along the ground like the Lark; and

A PLEA FOR SPARROWS.

YOUR correspondent, "X. Y.," in his vehemence against the poor Sparrows, deals a little too largely in mere negative argument, which seldom proves anything. "They do not consume caterpillars, &c.," because he has often had trees in his garden covered with them, though numbers of Sparrows were about. I may as well say my stacks and farmyard swarm with mice, and yet I have several cats: *ergo* cats certainly do not eat mice. Can "X. Y." prove that no insects are taken, because he sees a great many on his trees?

That farmers and gardeners generally, who see the harm the Sparrows do at certain times, and do not trouble themselves to look a little further, and acquaint themselves with their nature and habits, should agree in denouncing them as vermin, is hardly to be wondered at; but it does not prove that they are correct in their notions. Nor does it follow because "X. Y." does not know a single case where a farmer or market-gardener wishes to preserve them, that nobody else does. But be it so, many things besides Sparrows suffer from old prejudices, which have no foundation in truth. The common snake, the toad, the hedgehog, &c., are commonly and wantonly destroyed, though every well-informed person knows them to be harmless. That Sparrows do harm in eating corn, &c., no one, of course, denies; the question is, Do they do most harm or good? That they bring up their young largely on caterpillars when they are at hand, and that myriads are thus destroyed every season, is, I believe, a fact too well known to be set aside by a mere *ipse dixit* to the contrary. There are those who have taken the trouble to watch for hours and count the numbers which have thus been taken to a single nest, and if one such fact can be established, it proves far more than the co-existence of caterpillars and Sparrows in the same garden can disprove.

At all events, if "X. Y." means to convince people, he must have something better to advance than negative proofs, which can at any time be made to support the greatest absurdities.—JUSTITIA.

TAKING HONEY FROM STUPIFIED BEES.

I PURPOSE taking honey from my bees, which are strong, by means of Messrs. G. Neighbour & Son's prepared fungus, placed in his fumigator fixed to bellows, and I am not sure how much it requires to stupify without killing them. Could you tell me about how many puffs of smoke it is safe to blow into the hive? I never took honey in this way before, and I should be obliged if you would tell me this, and also whether it is best to rob the honey from the sides or centre of the hives.—L. A. G.

[If you attempt fumigation you must smoke the bees until they are quiet, and run the risk of some portion of them perishing from an overdose. Bees that have once been stupified in this manner seldom thrive afterwards, receiving, as we believe, permanent injury from the operation. We should, therefore, recommend you to eschew fumigation altogether, and follow the plan described in pages 45 and 46 of "Bee-keeping for the Many." When you "take" any of your hives we should advise you to make a clean sweep of it, and add the inhabitants to an adjoining stock. By robbing them of side-combs (which alone must be meddled with under any circumstances) you would inflict so great an injury as to render their surviving the winter very problematical. A moderate pruning may be allowed if the bees are to reap a second honey harvest on the moors, but not otherwise.]

PRODUCTION OF DRONE EGGS.

I HAVE to thank "B." for the communication on this subject which appeared in THE JOURNAL OF HORTICULTURE of the 13th inst., and in which he refers to a passage, in page 44 of Dr. Bryan's "Honey Bee." I must confess to some doubts of Huber's theory as to the effects of retarded impregnation, and that I am more disposed to attribute the phenomenon of drone-breeding queens to true parthenogenesis. It must be remembered that Huber had no idea that a virgin queen might be capable of laying eggs which would produce drones, and that he might reasonably, although erroneously, infer that a retarded impregnation had taken place when he found drone eggs laid by what might possibly have been a virgin queen. It is, however, nothing unusual to find a young queen laying a few drone eggs in worker-cells as if by mistake; but in the instance which I have recorded

the number was so great as to be remarkable. Should anything further occur to throw light on this obscure subject, it will not be lost sight of by—A DEVONSHIRE BEE-KEEPER.

LIGURIAN BEES IN SCOTLAND.

THE following paragraph from *The Berwick Advertiser* proves that Mr. Swan, to whom I sent a queen last year, has had every reason to be satisfied with the superiority of Ligurian bees.—A DEVONSHIRE BEE-KEEPER.

"DUNSE.—*Bee-swarming Extraordinary.*—Some time ago we announced the introduction of the "Italian Alp or Ligurian Bee," by Mr. J. Swan, Dunse, and then stated that the hive first introduced had swarmed twice. A few days after that announcement it swarmed a third time. A virgin hive has been procured from the first swarm, and what is most extraordinary is, that the second swarm, which was hived on the 12th of June, has also produced two very large swarms—an occurrence, we believe, altogether without a precedent in Scottish bee-keeping—so that no fewer than six fine swarms of this new variety of bee have been produced from one hive during the present summer. The last swarm, although a second, weighed fully 4 lbs. of bees, which would thus amount to about 20,000 workers to the hive. The above speaks well as to the prolificness of the Ligurian bees, and we shall be glad to be able to inform our bee-keeping readers, at the end of the season, of their superior honey-gathering qualities also."

HOW I BECAME AN OXFORDSHIRE BEE-KEEPER.

(Continued from page 412.)

"But when thou seest a swarming cloud arise,
That sweeps aloft, and darkens all the skies."

I HAVE found, good Master Virgil, in those instances, that the queen is rarely there, and without mixing

"With tinkling brass the cymbal's droning sound,"

or any of those other "alluring savours" you so mellifuously recommend, the "unreconciled deserters" will, in about an hour's time, return of their own accord, and wait a day or so longer till the queen is ready to go with them. Before I knew so much about bees as I do now, I remember I used to be in a great strait when a swarm flew high, and settled on the boughs of the beech-tree tops which overshadow my hives; but after having made preparations three or four times with ladders, linen-lines, saw, &c., intent on capture—worthy a scaling-party in a forlorn hope—I found, by the time the preparations were completed, that the besieged were retreating back to their hive. So now, in their high and flighty humours, I merely take the precaution to keep my eye upon them for an hour or so, when, if they are settled and remain quiet and compact, that is quite another view of the case, and the scaling apparatus would be put in use in earnest. But their several castle buildings that way have never favoured me with any result, save in their returning to their hive. When they hover low is the true sign, and a row of peas or a dwarf fruit tree becomes irresistible for the queen in her first flight to rest upon with her faithful followers, than which—

"—not Egypt, India, Media, more
With servile awe their idol king adore."

From ten o'clock till two is the likeliest time for a swarm to come off, though that period does not serve to pin one's faith to; for from eight A.M. to five P.M., my bees have called me forth on those occasions. Premonitory, in the evening, I listen with my ear close to the hive or hives suspected to swarm, when, if the queens are trumpeting, be watchful next day, or if a previously busy hive show sudden inactivity, look out. Have a hive ready with every projecting spray clipped close away from its inside; for any, the least protruding piece of straw there, the bees will cut away with their mandibles, and it gives them incalculable labour to do so. Introduce the crossed sticks as comb-supports, and if the hive is brushed out clean with a hard brush, it is all the preparation it will want; for the old-fashioned sweet applications of our grandmothers are of no use, they only give the bees a great deal of trouble to clean them off again. If people are old and obstinate, and will apply them, there is no remedy. Some ten years ago I was in London, when I expected my first bees' first swarm. I left all the apparatus ready, and word for the dame who kept bees in this place, and she promised to attend

to the swarming of mine during my absence, to be sure not to apply any internal applications, but in vain. I forget how many nostrums she concocted, and slushed into the hive with a bunch of nettles or something; but apply the "dressings" she would, or not hve the bees at all. In addition to the hive have a tablecloth, a goose's wing, and four pieces of broken bricks; and, of course, the bee-stand is ready, as I, or somebody else, have already advised upon. Do not "tang" the bees when swarming, as its only use would be to excite the queen to prolong her first flight, and, if she found herself strong upon the wing, to continue it much farther than would be agreeable to the pursuer.

When my bees swarm I remain quietly amongst them, and I often think they favour me for so doing by settling near my immediate presence; but be that as it may, two swarms apparently returned this season to the garden, when I appeared there to the tune of what I call my bee voice, which I always use when I go near them—viz., "boys, boys, boys!" pitched to a high note, in the key of two flats and one sharp. In the first instance—and the coincidences are curious—when I arrived the swarm was inclining to a neighbour's garden, I called, and they came. Secondly, it was on the day of the Archdeacon's visitation, and my friend, Mr. Morris, P.C., attendance was required at the church. In the meantime a message arrived to say his "bees were swarming," and before I could hve them, and return, my own were doing the same, in a strong east wind, so much appreciated by Mr. Kingsley (?) and they were fast veering off into Blenheim Park as I entered the garden, when I sang out, "boys, boys, boys!" which seemed immediately to alter their intention; for they returned in the face of the wind and settled in the garden. Again, (poor old Brotherton! he will never march again—the bees will never molest him, or will he ever more call me to defend him from their attacks!) My new odd man when he is at work in their vicinity, and he braves them well, for a sting or two is of no consequence, I am often obliged to run to relieve some from the hair of his head, and sometimes to relieve him from their presence, though my bee voice rarely fails to appease their anger; and I never knew it fail to keep them from becoming peevish when I introduce strangers amongst them to explain my management, and those times are neither few nor far between.

The manner of hiving swarms is so generally known, that it seems needless to recur to it: still I will do so in passing, for what I write is intended as a guide chiefly to the inexperienced, and for young bee-keepers who wish only to undertake the management of a few hives, as well as merely an unfolding of the subject matter of how I do it. So, the swarm having settled, put on the bee-dress and gloves, and spread the cloth upon the ground, with a corner pointing under the bees. Lay three pieces of brick upon the cloth angularwise, and fit the hive upon them; reverse the hive, and hold it under the bees, or as near to them as possible, and if the bough is pliant, shake the bees into it; if not pliant, brush the bees tenderly into the hive with the wing, every one from the bough or tree-stock, if possible, to make sure of not leaving the queen behind; then reverse the hive over the cloth, and sit it upon the bricks. Bring three ends of the cloth on to the top of the hive, and keep them there with a piece of brick; and should the sun be shining hot, place a rhubarb-leaf or two or a green bough over all, and it will be pleasing to watch the march of the stragglers along that extended corner of the cloth, which was placed beneath them, up into the hive, when, if they all go, and remain quietly, it would be as well to take and place them on their stand, if it is near, and at once accustom them to their new domicile; otherwise, the evening is the best time to do so. Then take the bee-board, place the hive gently upon it, bear it quietly to the stand, and place the pan, or whatever shelter you may have decided upon, over it. Take away the cloth and bricks, fork out the footmarks from the soil, and the act is completed. Watch the bees next day, as they might just possibly not become reconciled to their new home, and fly off again. I never had a "sting" of this sort; but I have read of such an untoward event which was probably in consequence of some mistake in the management.

little stone blue (such as is used in washing linen) moistened sufficiently to rub on the part stung; it gives instant relief, and the wound will only feel a little stiff for twenty minutes or half an hour. A small piece of blue might be carried in the pocket ready for use now wasps are so numerous.—A. RICHARDSON.

MAKING CAYENNE PEPPER.

PROCURE an ounce of the small long-pod West India chilies. They should be a half or three-quarters of an inch long. They require no drying (generally), and have only to be passed, pods and seeds together, twice through a small steel mill, set so as to grind it rather fine, and you have near an ounce of the finest, strongest, and most aromatic cayenne pepper that can be produced, and more than any two lovers of curry can consume in a twelvemonth. No sifting is required, only keep it in a dry, well-stopped bottle. If you pass a little whole rice through your mill before and after grinding the chilies neither the pepper nor the mill will be the worse. Most lovers of cayenne do not like it in fine powder.

SOLUBLE CAYENNE.—Take an ounce of the ground chilies as in the last receipt, put it in a well-corked bottle with one ounce of spirits of wine (rectified), and one ounce of water. Let the bottle stand ten or twelve days in a warm place, and shake it every day. Now strain it through fine muslin into a clean white jelly-pot with a cover, and add two ounces of table salt, placing the jar on the hob or in a gentle oven till as much of the salt has dissolved as the fluid can take up; ten minutes should do it. Then remove and pour the clear liquid into a dish or plate, and place it in the draught of a window that the liquid may all evaporate, and you will have nothing left but the essence of cayenne combined with the crystal of salt. It is very strong, and, of course, perfectly soluble.—B. W.

OUR LETTER BOX.

CHICKENS PLUCKING EACH OTHER (J. C.).—Whenever fowls eat each other's feathers it is from disease, or a deranged state of the body. It is at the moulting time, and for the sake of the bleeding stump of the feather. It is always imagined that it proceeds from feeding with meat. They learn it one from the other, and for that reason the pecker and the pecked should both be removed at once. As soon as the raw spot is seen all will peck it, and when they have once tasted they will continue to eat. Give nightly doses of castor oil; feed sparingly on oatmeal; and give lettuce to eat. Remove all that thus pluck off the feathers.

CHINCHILLA AND HIMALAYAN RABBITS (X. T. P.).—State what you have to sell to Mr. Jackson, 3, Thistle Grove, West Brompton, or to Mr. Baily, 118, Mount Street, Grosvenor Square.

GOLD FISH IN TANK (Delta).—We have no reason for believing that Gold Fish in your Herefordshire garden tank would be killed in winter. We knew a tank in Hampshire where they survived—care being taken to break the ice daily when the surface was frozen. They were gone before last winter. We shall be obliged by further information on this subject.

VOLUNTARY CROSS-BREEDING.—"I shall be obliged by any of the readers of THE JOURNAL OF HORTICULTURE telling me of instances they have known of cock and hen birds—Goldfinches, for instance, loose in a room or aviary pairing with birds of a different kind, as Canaries, while there were mates of their own sort also in the room. Any statements they could afford me of the numbers and kinds of birds that they have found to agree well together, and to succeed as to building nests and rearing young in a room or aviary, I should feel very much obliged for, as I am very anxious to collect as many proved facts as I can to compare with my own experience.—E. A. M."

RED MITES IN CANARIES (L.).—These may be got rid of by means of flowers of sulphur. Wherever the cracks or crevices of the cage show a whitish, speckled or mouldy appearance, these little pests may be expected to harbour. Open these cracks or joints with a chisel or screwdriver, so as to be enabled to insert a feather or camel's-hair brush, and by this means well oil the opening, and then fill it with the sulphur, a little of which may be dusted among the birds' feathers, being careful not to let it get into the eyes.—B. P. BRENT.

LONDON MARKETS.—AUGUST 26.

POULTRY.

The supply of good Grouse is small, but there are a great many inferior, and, consequently, unsaleable birds. There has seldom been less demand for poultry of every description than during the past week.

Each—s. d.	s. d.	Each—s. d.	s. d.
Large Fowls	3 0 to 3 6	Leverets	0 0 to 0 0
Smaller Fowls	2 6, 7 0	Grouse	1 9, 2 3
Chickens	1 9, 2 0	Pigeons	0 8, 0 9
Ducks	2 0	Rabbits	1 3, 1 4
			2 8, 0 9

to the walls, and occasionally even monkeys, a bear, or an eagle similarly constrained, prevented the more timid from venturing on the thoroughfare. Under the present town authorities his occupation would, no doubt, at once be voted a nuisance; and strange to tell, this small yard now derisively covered with first-class business premises, and dignified—name of Union Passage, produces to its fortunate owner at least £1200 a-year. But I “have (like yourself) trod a long way in gossiping,” still I feel certain numbers of your readers will peruse this digression with interest.

In the before-named yard an old-fashioned, immensely booted, speckled Bantam hen, which had oft-times raised a feeling of covetousness in my mind, but which was “not for sale,” tended seven of her chickens about a week old. In ill-judged desire for their protection she flew at a large bull dog of her owner's, and before any help was at hand the dog had torn her piecemeal. The cock, a bird of the same (now all but extinct) breed, at once took to the chickens temporarily, leaving all other of his female associates, and exercising every hen-like solicitude for their welfare, clucking or brooding them continually. At nighttime his assiduity was remarkable, and his pugnacity impetuous towards any one who endeavoured to deprive him of his charge. After these chickens were fully grown, a still more remarkable peculiarity of this individual bird was, that although running freely with hens, he would at any time desert time *in toto*, if young chickens were given him, and he would rear them as tenderly as those first mentioned, whatever their breed; though youngsters of any growth—say, three weeks old, he as positively disregarded, nor did his aptitude for hen's duties develop itself until the fatal accident to his mate.

As to hybrids (the cross between Pheasants and fowls), I have both purchased and bred many, as I confess for years I had a weakness for keeping these beautifully-plumaged and singular anomaly of the feathered tribes. They were with me troublesome customers, always fighting, and rendering themselves in every possible way disagreeable and injurious to the well-doing of their poultry companions. But hybrids may differ in their appetites, although you state “the apparent male of this breed is never so happy as when sitting on eggs; and we have observed it a hundred times, and have seen the bird watch the hen off the nest, and then settle down on the egg with all the delight in the world.” My “mules” were not by any means in even a single instance so amiably inclined to domesticity. They, if possible, it is true, invariably watched the hen off the nest after laying; but in lieu of the attempted incubation, they instantly broke the eggshell intentionally, and as quickly in illustration of the words of the old song—

“They made a great gulp, and they swallow'd it.”

My only object in writing my individual experiences is, lest any novice in poultry matters might to his after-annoyance perplex himself with the morbid inclinations of hybrids, as in years past I have done.—EDWARD HEWITT, *Sparkbrook, Birmingham*.

APIARIAN NOTES.—No. XII.

ARTIFICIAL SWARMS.—I have been very successful in this mode of increasing my stocks this season. The plan I have adopted is pretty much that recommended and preferred by Langstroth, the clever American bee-master and author. To go to the very commencement of the proceedings, I first removed a suitable brood-comb from a hive with all the bees then about it, satisfying myself that the queen was not on the comb; this was placed in a small box capable of holding four combs only, and carried off to another apiary; or, at another time, the bees were all brushed off the brood-comb into their own hive, the small box with the comb was put on the stand of a second strong hive, which was removed, when many of the bees were out, to another part of the garden. This latter plan ensures a sufficient number of bees, without any risk from fighting. Young queens are quickly raised, and this forms what is called by Langstroth a nucleus. So soon as a few royal cells are sealed over, some of them may be cut out carefully and secured in combs, for the purpose of making more nuclei; these must be inspected from time to time, and notes made of the dates when the young queens come out. When one commences to lay eggs, it will be time to see about the artificial swarm. On a fine day invert a strong stock, which we will call A, and drive every bee into an empty hive; set this on the stand of the old stock. Having

captured the queen from the nucleus, either at once set her free with a few of her subjects among the combs of the old hive, or confine her for twenty-four hours in a small queen-box, made of perforated zinc, fastened in some way among the combs. A second strong stock, B, must now be removed from its place, and the hive from which the bees have been expelled, with its combs full of brood in every stage, and the young fertile queen is put in its stead. The bees that come home enter this hive, the brood hatches out, and, in a fortnight's time, this will be almost as populous as before the operation. The swarm C is pretty sure of doing well, having a great number of bees, with a fertile queen in almost every respect the same as a natural swarm. In a fortnight after the stock A was driven, proceed the same with respect to B, giving a young queen from another nucleus, and placing B on the stand of another hive, D, and so on, as much as you please. When the queens are removed from the nuclei, as they have laid some eggs, other queens will be raised; and it may often be found useful to have a supply of such at hand, even if no more artificial swarms are needed.

Out of an apiary which has reached to the number of nineteen stocks, I have this season had but four natural swarms; and those, being two firsts and seconds from two stocks, were united so as to make two only of the number of stocks. All my other swarms have been artificially formed; and I may say with very satisfactory results. It has frequently been but the work of a few minutes to drive a strong hive, so as to force nearly every bee into the empty one. A small box being at hand (containing a queen with a few bees) one side of which is made to slide easily, is secured among the combs. A strong hive is removed to a new stand, the driven hive taking its place. Being full of brood in every stage, enough will be hatched out in the course of a few days to make a pretty populous colony; but it is necessary that a good supply of adult bees be at once obtained, for the purpose of covering and rearing the brood in the less advanced state. This is best effected in the manner I have described. The advantages of this system of increasing stocks are, I think, very great, particularly to those apiarians situated as I am. Being confined to business and my house in town during the day, and having my bees chiefly in the country in three apiaries many miles apart, I am enabled to choose my own time; and in the morning or afternoon, generally about nine or four o'clock, to force the swarms required from my strong hives, which give me no further anxiety or trouble on the score of swarming, requiring no watching or other attention during the daytime. Langstroth gives many plans for the formation of artificial swarms, but this, which I have endeavoured to describe, appears to me the best and easiest.

LANGSTROTH'S FRAME-HIVES.—Having adopted this plan somewhat extensively, I cannot let this opportunity pass by without signifying my approval of it. Although late in May before being fully resolved to adopt these boxes, I have now seven of them well-established, either transferred from common straw hives, or by artificial swarms. The facilities which are afforded for the scientific management of bees—viz., the ease with which the frames holding the combs can be lifted out and examined—the ease and certainty with which artificial swarms may be made—the advantage of being able so readily to give to a weak stock a full brood-comb from a stronger neighbour—the fact that the bee-master can almost compel his queens to an amount of breeding which would not be possible in the ordinary domiciles—these and other desiderata combine to render this system of bee-keeping almost as near perfection as possible. These hives differ from other bar-hives chiefly in having loose frames to contain the combs, instead of simple bars. There is a space of about three-eighths of an inch at top, bottom, and sides, which allows the bees rapid access to every part, and facilitates the removal of frames.

THE WOODBURY COMB-BAR.—I can fully endorse the good opinion which the inventor entertains of this comb-bar. I have adopted the principle in my Langstroth-boxes, and on plain bars of my ordinary hives; also in one instance where the bees intended for an observatory-hive were first placed in a box with bars 17 inches in length. The combs were worked beautifully straight, and were shifted into the narrow space between the two glass sides of the unicomb-hive, without the slightest difficulty. It would not have been the case if the common bars had been used. Any bars can be easily altered, so as to form these improved comb-bars. A slip of wood one-eighth of an inch square is tacked to the centre of the under side of the bar, the lower angular edges of which are rounded off. Mr. Wood-

from the back of Warrington Crescent to the Newhaven road. This mighty congregation of gnats formed a lengthened column of 200 yards. Their numbers we believe to have been greater than there have been human beings on our globe from the creation to the present time.—E.D."

I can add that this curious sound is universal at particular times, and on those sultry and calm sunshiny days, during the short life of these insects in most localities throughout England.

To return to our own true English bees, I am rejoiced to say that they have made good progress in honey-gathering up to this day (a tempestuous wet day, 18th July); for one of my swarms of the 11th June is 30 lbs. weight, exclusive of hive and board. Except in the countries of heath, I fear the honey season is nearly over.—H. W. NEWMAN, *Hillside, Cheltenham*.

SKY BEES.

A SHORT time since walking with my wife in our garden, my attention was suddenly drawn to a sound like that described by your correspondent "G. C." And a neighbour having lost a swarm of bees a short time before, I jumped somewhat hastily to the conclusion that the missing bees were with me. I commenced searching, and was surprised to find the sound following but not the bees; until, arriving at a more open part and looking up, I discovered a number of flies flying very rapidly backwards and forwards, and emitting a sound like that of swarming bees. Will not this account for the noise heard by "G. C."?—J. C.

THE SALMON.

It used to be believed that the young salmon migrated to the ocean when only three or four weeks old; in short, that within so brief a period they were transformed into the silvery smolt, which, within six weeks, returned to the river as a grilse, weighing from 3 lbs. to 9 lbs. For the rectification of this inveterate mistake we are indebted to the late Mr. Shaw, of Drumlanrig, forester to the Duke of Buccleuch. By a series of experiments, of undeniable accuracy, he demonstrated that the little fish termed parr, and in England penk, fingerling, or samlet, is the true fry of the salmon, and that not till it is twelve months or even two years old, does it assume the smolt aspect, and migrate to the ocean. At the end of either of these periods the finger-like marks on the sides of the parr begin to be covered with a second lamination under the first scales; and it has been ascertained that fry without this new lamination show no desire to migrate, and that if placed in salt water they certainly die. But, arrived at the state of smolts, their desire to migrate is so irresistible that they have been known to perish by throwing themselves out of the pond in which they are confined. A most singular anomaly is exhibited in the varying period at which they become smolts and migrate. In the breeding-ponds at Stormontfield, near Perth, this has been observed constantly, and, singular though it be, it is not unprecedented, for Mr. Shaw observed the same peculiarity in the sea-trout. About half the fry do not assume the silvery coat of the smolt until the end of the second year; and thus while they weigh about half an ounce, and are still veritable parr, those which migrated have returned from the ocean weighing, it may be, considerably more than 5½ lbs.—the exact weight of the first grilse known to have been one of the smolts liberated at Stormontfield, and honoured by being daguerreotyped as the first-fruit of a most important experiment in pisciculture.

The exodus of the smolts from the river is chiefly from the middle of April to the middle of May, though earlier shoals are on their route in February and March. Mr. Shaw once had an opportunity of observing the rate at which they proceed seaward, and found that it was about two miles an hour. Arrived at the ocean, a six weeks' sojourn amid the bounties provided for them has an effect upon their growth that the tiny smolt is converted into a vigorous grilse, weighing from 5 lbs. to 8 lbs. Next season this weight will be doubled; but how long this progression in size will continue we cannot guess, as the actual limits of the salmon's age cannot be ascertained. If endowed with anything like the longevity of the pike, salmon may rival *Athusa*. Gesner relates that a pike was taken in Subbia bearing an inscription which demonstrated it to be 267 years old. It is maintained by Mr. Boccia that the microscope shows annulations on the scales of the salmon denoting his age, just as

the rings on an oyster shell reveal the antiquity of that estimable mollusc. As to the effect of sea fare on adult salmon, the evidence is quite satisfactory. The Duke of Athole marked a spawned fish weighing 10 lbs. After an interval of thirty-eight days, during which it had performed its journey to and from the sea, it was caught again of the weight of 21½ lbs!

It is when running up the rivers, at the rate of about three miles an hour, that the history of the salmon terminates, by his being circumvented by the wile of man plying the murderous net, or angling with the treacherous hook. Of the pleasures of wandering along the banks of a famous salmon river, and engaging in a contest with a 20 lb. fish, fresh from the sea, the late worthy Mr. Young declared that "it beats the Grecian games all to nonsense." We have witnessed the discomfiture of a dear old Doctor in Divinity, well-known on the banks of the Tay for learning as well as piscatorial skill. He had hooked a heavy fish immediately above the Linn of Campsie. The fish, after dashing up and down with uncontrollable vigour, and repeatedly trying to shake itself rid of the hook, by springing some 6 feet out of the water, at last made a rush at the linn. The contest was suddenly terminated by his floundering into deep water, which forced him to swim for his life. Still grasping the rod, he rose, puffing, to the surface; but prudence forbidding a swim in pursuit over the linn, he threw it from him, ran to a boat as fast as a man so water-logged could manage, and in it descended the roaring linn in quest of rod and fish. The rod was recovered, minus the line and the salmon.

Better luck had Duncan Grant, a shoemaker, in the Tweed. After a seven hours' fight with a huge fish, which at last took refuge sulkily under a stone, Duncan was so exhausted as to think of ending the struggle by breaking his tackle, when hope revived as he put into practice this original expedient. Laying himself comfortably on the bank, with the line between his teeth, he proceeded to refresh himself with a nap, coolly saying to himself, "If he rugs when I am sleepin', I think I'll find him noo." After a three hours' sleep, a furious tug awoke the invigorated cobbler. Starting to his legs he followed the fish, which was now rushing down the stream with prodigious speed. Exactly twelve hours after hooking him, he *cleik*ed out of the water a magnificent fifty-four pounder.

What a trying moment is that, when the *cleik* is about to secure the prey! Often have we seen unskilled hands miss the fatal blow, and, in a second, the noble fish was free, and Piscator speechless! On such an occasion it is well to remember Burton's saying, "If so be the angler catch no fish, yet has he a wholesome walk to the brook, and pleasant shade by the sweet silver streams," where, as Leigh Hunt has sung, the finny tribes lead—

"A cold, sweet, silver life, wrapped in round waves,
Quickened with touches of transporting fear."

—(From "Good Words.")

OUR LETTER BOX.

POULTRY FOR PROFIT (W. H. H.).—Keep Partridge-coloured Cochins, and Speckled Dorking pullets in equal numbers—none older than one year—and one Dorking cock to each half-dozen pullets. By this arrangement you will have a good supply of eggs at all seasons, and all the chickens will be excellent for the table. Have the whole of the brick floor of your hen-house covered 3 inches deep with the coal-ashes.

PIGEON-HOUSE (A Subscriber).—Without further particulars I cannot suggest any reason why your white Dragon Pigeon-shivers and does not lay. Neither do you say what kind of Pigeon-house you require, or in what position it is to be built. I can only say, let the northern and northern sides be close, either brick or wood, the whole space had better be roofed in to keep the house dry. Glass would be best, but slate, tiles, or even felt well tarred and sanded would do. The south side may be of wire netting or lath-work, with an entrance to let them out occasionally. As to nests for twenty Pigeons they should be arranged in ten pairs, shelves 1 foot wide and 18 inches one over the other. These shelves divided into three-foot compartments, having a nest at each end would be the simplest, or pens would be preferable. Mr. J. M. Eaton, of 81, Upper Street, Islington, has published a diagram of first-rate pens, and in *THE COTTAGE GARDENER* of February 19th, 1861, you will also find a very good plan for pens or the internal arrangement of a Pigeon-house. Red-coloured Pigeons are best bred from two reds, or one red may be paired with a yellow, black, or even blue, but the young are not likely to be so regularly coloured. Other colours will sometimes breed reds if they are bred from or have been crossed with reds previously. I once had a pair of blue Dragons that occasionally threw reds.—B. P. BARNES.

RABBITS FIGHTING (J. G.).—No place can be worse for Rabbits than a pit 6 feet square. Such a small place is only of a size for one doe, and nothing you can do will prevent their fighting if you put more than one in. A pit is a very bad place for Rabbits because of the impossibility of either cleaning it out thoroughly, keeping it dry, or ventilating it. The place is always full of impure air, causing disease.

ERRATA.—Page 33, col. 2, line 9 from top, for "pastor arisians," read "pastor arisians."

WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1860.										
Day of M th .	Day of Week.	SEPTEMBER 3—9, 1861.	Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				deg. deg.			m. h.	m. h.	m. h.		m. °.	
3	Tr	Chelone.	30.052—30.031	71—44	N.	—	17 af 5	41 af 6	20 3	28	0 50	246
4	W	Liatris.	30.157—30.135	69—38	N.W.	—	19 5	39 6	sets	●	1 9	247
5	Th	Eupatorium sessilifolium.	30.192—30.175	70—53	W.	—	21 5	37 6	19 a 6	1	1 29	248
6	F	Lobelia.	30.348—30.301	63—37	N.E.	—	22 5	34 6	39 6	2	1 49	249
7	S	Boltonia asteroides.	30.308—30.126	68—40	N.E.	—	24 5	32 6	0 7	3	2 9	250
8	Su	15 SUNDAY AFTER TRINITY.	30.012—29.977	72—47	N.E.	·01	25 5	30 6	28 7	4	2 29	251
9	M	Helianthus divaricatus.	30.064—30.052	60—31	N.E.	—	27 5	28 6	1 8	5	2 49	252

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 69.8° and 47.2° respectively. The greatest heat, 83°, occurred on the 5th in 1848; and the lowest cold, 28°, on the 7th in 1855. During the period 136 days were fine, and on 103 rain fell.

REVIVAL OF LAYERING CUTTINGS.



ARE more easy and with much better results than some of the propagators have met with in their closest houses and greatest

heat is an old neglected way of propagating, during the summer months, some of the most difficult plants with which amateurs have to do in the open air.

It is over a quarter of a century at least since the plan made the last season's growth in our books; and if a score of old gardeners had been gathered to their forefathers, the practice might have been brought out now as quite a new discovery in a branch of propagation for middle-class society, and for all those whom we bear on the surface of our thoughts when we write about the practice and the projects of the times we live in.

But, lest I should have forgotten some of the corners of the proceeding, and having had a subject well fitted to test the doubt thrown on my hands by the dispersion at the Experimental Garden, I tested the practice, and with the loss of one subject only, and that was the first, and failed for want of my hand being in practice.

People who were at the Rose Show at South Kensington, and have seen the splendid row (all round at intervals) of *Centaurea candidissima* with which the Messrs. Veitch, of the Exotic, furnished the middle stand in the Society's conservatory, will never forget the sight, neither shall I; and there was another row round the outside of that grand circle as easily and as cleverly done as the other was difficult and tedious—I mean the couple of hundred of large No. 48-pots brimful of *Lobelia speciosa*, and the pots placed so close together as to make the blue edging an unbroken circle or edging all round. Now, that is what thousands would be glad to have by them in the country to be ready for some upshot or another—as a wedding, a Prince's visit, a fancy fair for some charity, a birthday festival, and such-like events, when extras come in as close and tidy as did that singularly beautiful edging on the occasion of the July Rose Show.

But that *Centaurea candidissima* pleased me the most, and because that then I was in the dumps at losing one plant of it by the experiment on the ancient way of propagating difficult things out of doors; and how could I

No. 23.—VOL. I., NEW SERIES.

know but that the whole might follow suit and leave my experiment on the shelf for another quarter of a century? But I lost no more of them. The plant of *Centaurea candidissima* was sent three or four years back to the Experimental by Mr. Salter, of the Versailles Nursery. It was a favourite in the conservatory there in the height of summer and in the depth of winter; and for a drawing-room, or sitting-room, or anywhere about a house, there is not a cleaner-looking plant in the whole vegetable kingdom. If we could get it a yard high by the thousand, instead of *Scrophularia nodosa*, you would see the effect of cutting short off the heavy burden of varied green from the light airiness of a grand ribbon-border in front of a shrubbery, or along a carriage drive out of some plantations "going up to the house."

Now, it was this very plant for that one purpose that I was anxious to do on the old plan, so as that anybody after once obtaining a plant of it might be able to make his or her own stock of plants of it.

The first of my proceedings early last May was to cut out the heart-bud of that *Centaurea candidissima*, both to keep it from flowering and to cause it to make side shoots. It did make side shoots in earnest last June. It was planted out of doors and out of pot in a south border under a south wall, in rich earth, by the middle of May, for it requires exactly the same kind of treatment in summer and winter as a pot Tom Thumb Geranium, the same soil also, and the same quantity of water every day in the year. Tom is fidgetty about water in winter, so is *candidissima*. Tom likes ample drainage and air from below for his roots, so does the other; and both agree as to soil in pots, and both enjoy the luxury of planting out of pots and out of doors for a whole summer. Tom is easy to increase, but this *Centaurea* is uncommonly difficult to multiply by common modes. You might almost think the plant had common sense, and made bad use of it, by seeming to despise being cut or done for in those modes, save by a first-class gardener, or second-class propagator in a nursery. But the old way brings it to the test, it roots in that way just as well in the smallest as in the best and biggest garden in the kingdom.

I allowed the side shoots to attain 6 inches or 7 inches in length, some were longer; then I cut them within one joint of the old stem of the plant, and cut off all the leaves except the upper pair, and those I shortened as they used to do all cutting-leaves when I was young; I smoothed under the bottom joint just as for a cutting, and then I made a carnation-like layer of the very top of the shoot—all setting out on a stool, recollect. I then planted the bottom of the shoot like a cutting, but in a slanting way, so as not to be too deep; then I put down the layer just as if it were a layer of a growing branch, and there was only that one that missed taking root.

The plan, I would guarantee, is also applicable to five hundred kinds of plants, from the old Clove up to the new *Mutisia decurrens*. You might practise your hand, indeed, on the old Clove itself. Take the longest shoots of it from your oldest plants, I mean those that are now too old to be kept longer; strip off all the leaves as I did,

No. 675.—VOL. XXVI., OLD SERIES.

of some of the birds in question having been opened, and some further information will be sent you; or, as you say, it will stop many from sending their birds anywhere. I think it would be a good plan if the managers of poultry shows would have large tickets printed and displayed about, stating, "Persons seen giving poultry anything to eat, &c., will be turned out of the Exhibition."—T. B.

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[Your hen died of diseased biliary organs, caused by excessive and improper feeding. All the bile remained in the liver, and if you noticed it you will bear us out, that the liver, instead of being the deep dark brown it should be when healthy, was wainscot colour; that it was so altered from its proper formation that it could be spread like butter with a knife; and the gall-bladder, instead of being full, round, and bottle-green, was nearly empty, and of a very pale sea-green, or sickly yellow hue. The fowl had a fat liver. In such case the bird becomes thinner, and the liver and intestines become fatter. In this stage it is incurable; but it seldom occurs when fowls are only moderately fed, and are allowed to exert themselves a little.]

AVOIDING ROUP.

HAVING seen in your *Poultry Chronicle* much complaint of roup amongst fowls, I am induced to send you a little of my experience in poultry keeping.

I have been amongst them thirty years, and have kept most kinds, and I am certain that a suitable situation is the greatest desideratum in poultry-keeping, particularly as respects roup. I have never found that poultry do so well on low clayey land as on sloping sandy soils; the Dorking, Spanish, and the Hamburgs in particular. Any other sorts suffer less, and Game, above all others, have done the best with me in a low place, and I have found that good dry barley is the best food (considering they have a good run) for them, even for chickens as soon as they can take it—say when a month old.

I consider all opening food ought to be avoided for roup fowls as they are often too much purged.

I should never roost roup fowls in a house at all in summer, the boughs of a tree form the place better than all others for them, and will prove to have more influence over the disease than anything else.

I have cured a bad case, in a fortnight, with a dose of twist tobacco at roost time, about half-an-inch every other night, and the tree for a roosting-place.

I never remember seeing roup bad where fowls have roosted out. In the case of young chickens it is awkward: you cannot roost them out on a perch, but they may be put in an open shed, or any other unclosed building would do. If they roost inside, thorough ventilation must be seen to; and the fewer chicks with each hen the better for avoiding the disease. If one should be taken with it, and the chicks are young, kill it at once, if you

mean to avoid contagion, as if they are under the hen at night the rest will be sure to catch it. In all cases feed well; if they are very young do not be afraid of an egg or two chopped fine, and rubbed into three or four times their bulk of good, stale, white bread, and a few grits now and then in the day. With this management you will not want many of the nostrums so often described as certain cures.—OLD HAND.

"B. & W.'s" APIARY IN 1861.

SUNDRY notices of my apiarian proceedings this year have appeared in your columns from time to time during the summer which is now waning; but as they have only afforded glimpses of the condition and history of my bees, and have been written unconnectedly, I purpose, according to my annual custom, to relate in order what has befallen me in the way of good and ill success.

I began the year with five stocks out of the seven which I had at the close of last summer. As I took 29 lbs. of honey in supers from them in a bad year, I only saved these five by dint of steady feeding with sugar water all through the autumn, winter, and spring—in fact, up to the second week in May. At that time the bees stood as follows in my bee-house:—

A, defunct.	B, strong.	C, not very strong.
D, strong.	E, moderately strong.	F, strong.

B gave me two artificial swarms. I call the first A, as it was put in the place of defunct A. The second remains B, as I destroyed and plundered the old hive-box ultimately.* These swarms were forced severally on the 11th and 23rd of May. It was on the 11th that I received my first Italian queen, whose misadventures were recorded in this Journal at the time. My impatience was undoubtedly the cause of her destruction by the bees of B, to which I offered her twenty-four hours after swarm A was forced. When the second swarm was driven on the 23rd, the young queen, which they reared artificially, was still imprisoned together with four other princesses in their cells. I cut out these royal cells, adjusted them in a glass over a hole in the top of the box into which the swarm was driven, and had the pleasure of seeing her issue from her prison on the 27th. The others were immediately destroyed. This swarm thrived extremely well, and was full of honey and bees at the end of June, which was also the end of the honey season in this neighbourhood. The first swarm A also did remarkably well, and gave me a super weighing about 15 lbs. nett, a small box nett 5½ lbs., and 1½ lb. in a small glass globe—22 lbs. in all.

Out of F I forced a swarm on the 17th of May, which, as it took the place of the old stock, also retains its title. The parent stock was removed to a window in another locality, and was ultimately broken up and plundered on or about the 12th of June, when the bees with their young artificial queen were driven into a Tasmanian hive (G). These have since done well, being weighty with honey and full of bees. The swarm F gave me 36½ lbs. nett honeycomb in various boxes and glasses. I, perhaps, obtained so much honey from this swarm because I sliced up the combs in two of the boxes, allowing the honey to run out, and returning the foundation of the combs attached to the bars, all that the bees had to do being to elongate the cells and replenish them. A great economy of wax is effected by this method, although it is a somewhat delicate operation and troublesome.

On the 24th of May I forced a swarm out of C, the swarm taking the place of the old stock. The latter was removed to a stand in my garden, but came to nothing, owing to the entire migration of the bees to their old locality. There was an immense quantity of brood sealed up; but few came to anything, owing, I presume, to the absence of sufficient heat in the hive. I was never more disappointed in my calculations; but my impression is that a young queen had been artificially reared by the bees in April, and that she had only just filled the hive with her first brood. The old bees would thus be all strong on the wing, and familiar with their old haunts. The swarm, however, gave me about 21 lbs. in glasses and boxes.

D stock swarmed naturally on the 14th of June. The swarm H was put into an improved straw hive and located in my garden. It thrived so well that I obtained from it a beautiful globe weighing 6½ lbs. nett honeycomb on the 22nd of July

* This box was superadded to another hive till every particle of brood was hatched out of it. Several pounds of honey were taken from it.

GREEN (Grey and Mottled).—Highly Commended, Mrs. F. Blair; Mrs. Seamons, Aylesbury.

TURKEYS.—Highly Commended, Marchioness of Winchester; Miss L. Crawshaw, Reading; Master E. Guy. Commended, Marchioness of Winchester, Andover.

ORNAMENTAL WATER FOWL.—Commended, C. Baker, Chelsea.

EXTRA STOCK.—Commended, J. Ellis, Berks.

PIGEONS AT THE CRYSTAL PALACE SHOW.

The Show of *Pigeons* numbered rather over 200 pens, of which the *Powters* and *Carriers*, shown as single birds and not in pairs, constituted one-third. As a whole the Show was not so good as we have seen it, the falling off in some classes being very marked. When the names of Wicking, Hayne, Maddeford, Jones, Weir, and others are absent from the catalogue of a metropolitan show, it is necessarily shorn of some of its greatest attractions.

In the *Powter Cock* class Mr. Paton was first with an old Blue bird, 6½ inches in limb by 18½ inches in feather; and highly commended for a young Blue that was regarded by all the *Powter* breeders that we conversed with as the best bird in the class, being longer and closer feathered in the legs and much slenderer in the girth than the old bird. The owner, certainly not a bad judge, placing nearly double the value on the commended bird. It was very difficult to see the reason of many of the awards in the *Powter* classes. For example: a very poor White cock, 6 inches in limb and 17 inches in length, was commended; a White hen better absolutely in every respect, and as a hen relatively immensely superior, was not noticed. The second-prize cock, a very venerable old Blue 6½ inches and 18 inches, was miserably decrepit on the feet. The third, a Mealy, remarkable for nothing except a very bad colour, 6½ inches in limb and 18 inches in length. In the *Powter Hen* class the first went to a Blue 6½ inches and 18 inches. The second to a Red; and the third to a remarkably good bird in every other respect except colour, which was grizzled. She was 6½ inches by 17½ inches, a slim, close-feathered, upstanding bird, the picture of what a *Powter* should be in form and carriage.

In *Carrier Cocks* the first prize went to a Dun of Mr. Parkes, a heavily-wattled bird, but coarse and rather wanting in elegance of style. The second and third were Blacks. The highly commended young bird of Mr. Goss was a very stylish narrow-skulled bird of very good carriage.

In the "*Cocks of any other colour*," were shown two Black hens of Mr. Corker. These were entered in mistake, had they been in the hen class their insertion in the prize list would have been certain. In Black Hens we were much struck with the goodness of the first-prize hen. The Blue prize hen of Major Hassard was very good.

Dragons were an unsatisfactory class to judge the prize. Blues went to a rather heavy, thick, coarse pair. A pen of elegant light birds that look too much like two hens were passed over without notice.

In the *Almond Tumblers*, Mr. Corker had the first prize with a splendid pair of birds. The head of the hen is marvellous—so very good, in fact, that one cannot help thinking that Nature has been assisted by Art in the manufacture of this perfect chrysolite. Mr. Esquilant took second with his well-known pen, the hen being what is known as a primrose. Mr. Percivall was third. In *Mottles* there were only two entries. Mr. Esquilant's Blacks winning. In the class of *Short-faced Baldheads* the first prize went to a pleasant pair of flyers that were not short-faced at all. The second-prize pen were exceedingly good. In the class for *Self-coloured Tumblers*, the prize was given to a very good pair of Kites; the second to Blacks. It would be interesting to know what exhibitors are to understand by the term *Self-colour*. It is usually understood to mean one uniform tint; and had the general opinion been that Kites were eligible to compete, it is certain that the number of entries would have been multiplied threefold.

The first prize *Yellow Jacobines* were good. The second, *Whites*, very poor. The class as a whole bad.

In *Owls*, Mr. Morris took a first with his pen of *Miniature Whites*, the same that won at Sheffield.

The first prize in *Nuns* went to Blacks that were claimed at £4. *Urbits* were not remarkable.

White Fantails good.

Black Barbs very poor except the cock in the prize pen, a first bird.

Aggies, a fair show; a pen of Blues or rather Silvers winning the third. Why these winners should be prior to *Magpies*

and only two to *Jacobines* and other more valuable classes is an enigma.

Trumpeters poor. A fair pen of Black Mottles was disqualified for some reason not stated.

As if to show the good effect of a little liberality in a prize list, we may point to the *Runt* class (at most Shows the smallest of all the classes.) This contained twelve pens, because the prizes were worth competing for: whereas the *Trumpeters*, usually forming well-filled classes, were here only two in the White class and three in the Mottled. The birds so bad that one prize out of the two was withheld. No commendation given, the result of offering a single prize of 15s. in each class of *Trumpeters*, whereas three prizes commencing at £1 are given to *Magpies*.

In the "*Any other Variety*" class, the first prize was given to the *Wongo-Wongos*, noticed in our account of the Sheffield Show. The second to a pen of Australian Bronze-wings, in good feather.

The practice adopted by some Judges, of giving prizes to distinct species of foreign birds that are utterly incapable of domestication in a class which is expressly stated to be for the encouragement of "*Any other new or deserving Variety*" of our domesticated species, will very shortly have the effect of preventing any entries of varieties properly so called. This class was formerly one of the largest in the Show, it now numbers eight entries only, excluding the foreign species.

We have no wish to see these birds excluded from Shows; but let a distinct class be made for them. Every person would see the absurdity of giving a prize to an Antelope in any other variety of domestic sheep: yet it would not be one whit more ridiculous than rewarding the exhibition of foreign Doves, to the exclusion of the breeder of new varieties of our domesticated species.

POWTERS OR CROPPERS.—Highly Commended, J. Paton, Ayrshire; W. B. Tegetmeier. Commended, Marchioness of Winchester; R. S. Edwards; T. H. Evans, Lambeth Walk. *Hens of any colour*.—Commended, W. B. Tegetmeier, Muswell Hill.

CARRIERS (Cocks, Black and Dun).—Very Highly Commended, P. Goss, Plymouth. Highly Commended, Major F. C. Hassard, R.E., Portsmouth. Commended, Major F. C. Hassard, R.E.; P. Goss. *Cocks of any other colour*.—Highly Commended, F. Esquilant, Oxford Street. *Hens, Black and Dun*.—Commended, J. Parkes, Edgware Road.

DRAGONS (Blue).—Commended, F. White, Clapham Common. *Any other colour*.—Highly Commended, J. Percivall, Peckham.

SHORT-FACED BALDHEADS.—Commended, H. Morris, Forest Hill.

SHORT-FACED TUMBLERS.—Highly Commended, F. Esquilant, Oxford Street.

OWLS.—Commended, H. Morris, Forest Hill.

FANTAILS.—Very Highly Commended, W. Dodds, Upper Clapton. Commended, Major Cook, Somerset; J. Percivall, Peckham.

BARBS.—Highly Commended, C. Baker, Chelsea.

SPANISH AND LEGHORN RUNTS.—Highly Commended, C. Baker, Chelsea. Commended, T. D. Green, Essex.

RABBITS.

FOR LONGEST EARS.—Highly Commended, J. Angus, Woolwich. Commended, Guest & Coleman, Birmingham; M. Taylor, Herts.

BLACK AND WHITE.—Highly Commended, J. Morris, jun., Forest Hill. Commended, Guest & Coleman, Birmingham; H. Hinde, jun., Norwich.

YELLOW AND WHITE.—Highly Commended, R. J. Morley; R. B. Newsom, Brixton Hill. Commended, C. Felton, Erdington.

TORTOISESHELL.—Highly Commended, W. S. Roffey, Woolwich. Commended, H. Hinde, jun.; C. Sellen, Surrey; A. Stedman, Surrey.

BLUE AND WHITE.—Commended, W. Griffin, Kent; Guest & Coleman.

SELF COLOUR.—Highly Commended, R. J. Morley, Blackheath Village, Commended, E. Davis, Russell Square; E. Hockley, Greenwich; C. Sellen, Surrey; T. Soles, Woolwich.

MORTALITY AT THE SHEFFIELD POULTRY SHOW.

WITH reference to your remarks on the mortality at the Sheffield Show, I would venture a suggestion. You take the case up most praiseworthy, but I and others who were there think you may be wrong; and until the proofs by analysis are published we shall continue to believe, and fully to hope, there was no poison administered. In the first place, we think many birds shown did not look well. Others in the same pens you mention looked dull; and we are inclined to think a great deal arises from the distances they travelled, the violent and rough usage they receive by railway porters, &c., want of food, and probably they were not in any way stimulated before sending off, which all birds should have before going to shows. We think, in the absence of further proofs, this is often the cause of deaths and illness after exhibitions: for it is not uncommon that a bird leaves well, he gets to his journey's end much changed, and, in the case of cocks, the combs often change and become more or less again. We hope, through your columns, to hear

of some of the birds in question having been opened, and some further information will be sent you; or, as you say, it will stop many from sending their birds anywhere. I think it would be a good plan if the managers of poultry shows would have large tickets printed and displayed about, stating, "Persons seen giving poultry anything to eat, &c., will be turned out of the Exhibition."—T. B.

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mean to avoid contagion, as if they are under the hen at night the rest will be sure to catch it. In all cases feed well; if they are very young do not be afraid of an egg or two chopped fine, and rubbed into three or four times their bulk of good, stale, white bread, and a few grits now and then in the day. With this management you will not want many of the nostrums so often described as certain cures.—OLD HAND.

"B. & W.'s" APIARY IN 1861.

SUNDRY notices of my apiarian proceedings this year have appeared in your columns from time to time during the summer which is now waning; but as they have only afforded glimpses of the condition and history of my bees, and have been written unconnectedly, I purpose, according to my annual custom, to relate in order what has befallen me in the way of good and ill success.

I began the year with five stocks out of the seven which I had at the close of last summer. As I took 29 lbs. of honey in supers from them in a bad year, I only saved these five by dint of steady feeding with sugar water all through the autumn, winter, and spring—in fact, up to the second week in May. At that time the bees stood as follows in my bee-house:—

A, defunct.	B, strong.	C, not very strong.
D, strong.	E, moderately strong.	F, strong.

B gave me two artificial swarms. I call the first A, as it was put in the place of defunct A. The second remains B, as I destroyed and plundered the old hive-box ultimately.* These swarms were forced severally on the 11th and 23rd of May. It was on the 11th that I received my first Italian queen, whose misadventures were recorded in this Journal at the time. My impatience was undoubtedly the cause of her destruction by the bees of B, to which I offered her twenty-four hours after swarm A was forced. When the second swarm was driven on the 23rd, the young queen, which they reared artificially, was still imprisoned together with four other princesses in their cells. I cut out these royal cells, adjusted them in a glass over a hole in the top of the box into which the swarm was driven, and had the pleasure of seeing her issue from her prison on the 27th. The others were immediately destroyed. This swarm thrived extremely well, and was full of honey and bees at the end of June, which was also the end of the honey season in this neighbourhood. The first swarm A also did remarkably well, and gave me a super weighing about 15 lbs. nett, a small box nett 5½ lbs., and 1½ lb. in a small glass globe—22 lbs. in all.

Out of F I forced a swarm on the 17th of May, which, as it took the place of the old stock, also retains its title. The parent stock was removed to a window in another locality, and was ultimately broken up and plundered on or about the 12th of June, when the bees with their young artificial queen were driven into a Tasmanian hive (G). These have since done well, being weighty with honey and full of bees. The swarm F gave me 36½ lbs. nett honeycomb in various boxes and glasses. I, perhaps, obtained so much honey from this swarm because I sliced up the combs in two of the boxes, allowing the honey to run out, and returning the foundation of the combs attached to the bars, all that the bees had to do being to elongate the cells and replenish them. A great economy of wax is effected by this method, although it is a somewhat delicate operation and troublesome.

On the 24th of May I forced a swarm out of C, the swarm taking the place of the old stock. The latter was removed to a stand in my garden, but came to nothing, owing to the entire migration of the bees to their old locality. There was an immense quantity of brood sealed up; but few came to anything, owing, I presume, to the absence of sufficient heat in the hive. I was never more disappointed in my calculations; but my impression is that a young queen had been artificially reared by the bees in April, and that she had only just filled the hive with her first brood. The old bees would thus be all strong on the wing, and familiar with their old haunts. The swarm, however, gave me about 21 lbs. in glasses and boxes.

D stock swarmed naturally on the 14th of June. The swarm H was put into an improved straw hive and located in my garden. It thrived so well that I obtained from it a beautiful globe weighing 6½ lbs. nett honeycomb on the 22nd of July

* This box was superadded to another hive till every particle of brood was hatched out of it. Several pounds of honey were taken from it.

Calceolaria-beds, but the very thing for Geraniums, which are now blooming nicely. I raised a lament lately about beds of Coreopsis refusing to open their buds. Some beds for a fortnight have been very fine, consisting of *tinctoria*, *atro-sanguinea*, *marmorata*, and others, in one mixture. I believe some thousands will order their threepennyworth of seed next season to try and beat me. I like them all the better because the humblest and poorest can have them. We have been obliged to water Calceolarias and Dahlias several times, and hope the weather will be a little more cool and moist now that the most of the harvest has been got in; and a little moisture would be the thing for Turnips. Lawns have required less attention; a slight skiff with the scythe when at all long, a whip with the double-edged knife, a slight clip with the mowing machine, set high so as not to dip too low, and cause it to look brown; and a whisk over with a light-hand wooden-roller, to make it smooth, are about all that were needed to make it smooth and comfortable. A few brownish spots are, nevertheless, appearing, and I should soon increase them if I allowed either scythe or mowing machine to go down deep in such weather; as watering is quite out of the question, as we can hardly obtain enough for pot plants.

Walks, though unrolled for a month, are in capital order; but are showing signs of cracking at the sides, and a few small weeds are appearing in places close to the sides. To remedy all this, a little salt was thrown along the sides for about 6 inches in width which will keep it more moist there, will destroy the small, almost imperceptible weeds, and will prevent the worms raising their little heaps to mar the regular level outline. At this season I do not mind thus treating the sides of a walk; but I would not, on any account, throw salt over the walk as a whole, if I expected to walk on it in winter at all comfortably.—R. F.

TRADE LISTS RECEIVED.

List of Bulbs and other Flower Roots, &c. By E. G. Henderson & Son, Nurserymen, &c., Wellington Road, St. John's Wood.—A copious catalogue not only of bulbs, but of many other tribes of flowering and ornamental plants. It contains also an account of novelties to be sent out in October, and a drawing of one, the ornamental-fruited *Epicynium leucobotrys*.

Autumn Supplement to the Gardeners' and Farmers' Vade Mecum. By J. Carter & Co., High Holborn, London.—This excellent supplement is itself a catalogue. Besides lists of the best varieties of bulbs, it points out the soils and culture they require; gives groups of those best suited for exhibition, outdoor cultivation, and forcing; lists of Ferns, and drawings of hanging-baskets, which Messrs. Carter sell ready stocked with growing Ferns; besides much other useful information which we cannot afford space to particularise.

Autumn Catalogue of a Choice Collection of Dutch and Cape Flowering Bulbs. By Butler and McCulloch, Covent Garden.—This is also a copious catalogue, and contains a great deal of useful information on the subject of bulbs.

Autumn Catalogue of Dutch, Cape, and other Flowering Bulbs. By Hooper & Co., Covent Garden.—Is an excellent catalogue, and embraces all that are worthy of cultivation.

Catalogue of Dutch Flower Roots, &c. E. Taylor Nurseryman, &c., Maiton, Yorkshire.—It contains very select lists, and includes similar brief selections of Pelargoniums, Petunias, and other florists' flowers.

Catalogue of Fresh-imported Bulbous Flower Roots. Sutton and Sons, Reading.—A very good selection, with some notes upon the culture of some of the genera.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.

* * * We request that correspondents will not mix up on the same questions relating to Gardening and those on routine and business subjects, if they expect to get them answered promptly and satisfactorily.

We cannot reply privately to any communication unless under very special circumstances.

SPARROWS (A. W.).—The paper your refer to was translated and published in the *Times*. We purpose to republish it. You will see some notes on the subject in our columns to-day.

BLOTCHED ROSE LEAVES (Old Subscriber).—These brown blotches arise from a defective supply of sap. If the soil was richly manured annually, and well watered and mulched during the summer, probably the blotches would not appear. Certainly not if the Roses were growing on their own roots and were so treated.

FIG TREES KILLED BY FROST (Subscriber, North Wales).—As they are throwing up vigorous shoots from the old stools, certainly prefer these to planting young trees in their place.

FRAMES (Goth).—Mr. Joseph Smith, Pine Cottage, New Road, Hammer-smith, W., can give you the information you require.

EARWIGS (R. L., &c.).—The only certain mode of destroying earwigs is by catching them. This can be effected by hollow tubes laid here and there. The common reed is fit for this purpose, but the hollow stem of the Sun-flower and Jerusalem Artichoke are even more so, as the insects are eager in the pursuit of the remains of the sweet pith. They are also easily caught between the folds of paper, or in pieces of cloth and linen laid on the ground. They creep into these traps in the morning after their nocturnal rambles, and may easily be shaken out and killed at any time of the day. Some amateurs of Pinks and Carnations place the feet of their flower-stands in vessels of water, which prevents the earwig from creeping, but not from flying, upon the plants, for the earwig has wings. Small flower-pots with a little moss in them are placed on the top of Dahlia stakes as traps, but a more sightly trap is figured and described in the "Gardeners' Magazine," xv., 190.

HEATING A SMALL GREENHOUSE—SWEET-SCENTED ROSES IN POTS—PARSLEY IN WINTER (Jame).—The small iron stove with the funnel through the roof, and a flat head so as to hold a vessel of water would suit you best, or a small brick stove within 18 inches of the back wall. Of Roses, you might have *Madam Hardy* as a Damask; *Blairli*, *Général Jacqueminot*, *Madame Plantier*, *Paul Perrat*, *Paul Ricaut*, *William Jesse*, among *Noisettes* and *Bourbons*; and among Hybrid *Perpetuals*, *Arthur de Sansal*, *Baronne Prevost*, *Caroline de Sansal*, *Jules Margottin*, *Louis Peronny*, *Madam Rivers*, *Souvenir de Leveson Gower*, and *William Griffith*. To have a good supply of Parsley in winter, sow in April, and cut down within 2 inches of the soil at the end of July. Either sow where it can be protected, or rather transplant in July where it can receive protection. We think any person that advertises in our columns could supply you true, and we feel confident that any respectable nurseryman on your side of the water would do the same, if you clearly stated what you wished, and that you would have none other sorts.

CARNATION (Seedling).—The Carnation from Glasgow was in such a shrivelled condition that it was impossible to decide on its merits. Send it in a box with a little damp moss, and we can then, probably, say whether it is worth growing.

SOWING LOBELIA SPECIOSA (W. H. F., Subscriber).—The best, and indeed the only time for sowing *Lobelia speciosa*, is the end of March or early in April.

ARBOUR (C. Cotton).—Not knowing whether you intend to use a trellis and not knowing either the size you wish for nor the exact object you have in view, we cannot advise. Evergreens are the best for every kind of arbour.

PINK GERANIUMS (P. M. J.).—The leaf and truss you enclosed are far from being like those of *Christina*. There is no Geranium yet of the same form and habit—bad habit, by the way—as those of Countess of Bective, not *Lady Bective*, and the flowers of *Christine*, and never shall be, that you may rely upon. We do not happen to know *Lady Ellesmere* *Verbena*. The kind inquired after is probably *Lady Middleton*, a light lavender, sweet-scented, very strong-growing *Verbena*, which was advertised erroneously as of mauve colour. A "small dark purple *Petunia* the size of *Shrubland Rose*," is no criterion to judge what flower the lady wants; any of the sixpenny packets of seeds would be sure to produce such a *Petunia*. Among all the Geraniums there is not yet one single kind with a pink flower, for bedding, save the dwarf pink Ivy-leaf called *Laternes roses* by Sweet; that race ran on from *Rosy Morn* to *Cherry Cheek*—all rose, or all cerise, or a mixture of the two. A good pink bedding Geranium is the greatest want in our day. Lilac and mauve Geraniums are also much wanted by such ladies as wrote that note which you enclosed. Where the soil suits the very dwarf pure pink Ivy-leaf Geranium there is not a prettier pink plant for beds. There is a true pink Geranium exactly like that pink in the said Ivy-leaf Geranium coming out next year, but it is as strong as *Christina*, or a little stronger, but no one knows yet if all kinds of soil will suit it. You heard that *Baron Hugel*, the freest bloomer of all the Geraniums, does no good in the splendid new Garden at South Kensington; and another *Baron*, called *Baron Riascoli*, is being now prepared to replace *Baron Hugel* there and probably in all other places.

NAME OF FERN (Mrs. N. C.).—It is not a Fern, but one of the Fern allies, *Lycopodium denticulatum*.

MUSCAT HAMBURG GRAPE (E. C.).—You are no worse off than other cultivators of this Grape; under any mode of culture, it is liable to fall both in setting and in swelling off its berries. If you remove it, plant in its place a *Buckland Sweetwater*.

FLOWER SHOWS FOR 1861.

SEPTEMBER 11th. ROYAL HORTICULTURAL SOCIETY. (Dahlias and other Cut Flowers.) *Garden Superintendent*, G. Eyles.
SEPTEMBER 18th and 19th. BRIGHTON AND SUSSEX. Sec., E. CARPENTER.
NOVEMBER 6th and 7th. ROYAL HORTICULTURAL SOCIETY. (Fruit and Chrysanthemums.) *Garden Superintendent*, G. Eyles.
NOVEMBER 12th and 13th. NEWINGTON CHRYSANTHEMUM SOCIETY. Sec., W. J. HOW.
NOVEMBER 4th and 5th. AL PACOCK (Chrysanthemum Show.)

WEEKLY CALENDAR.

Day of M th Week.		SEPTEMBER 17—23, 1861.		WEATHER NEAR LONDON IN 1860.					Sun.		Moon.		Clock before Sun.		Day of Year.
				Barometer.	Thermom.	Wind.	Rain in Inches.		Rises.	Sets.	Rises and Sets.	Age.			
T ^h	T ^h				deg. F.	deg. C.			m.	h.	m.	h.	m.	s.	
17	Tu	Xeranthemum lucidum.		29.625—29.505	62—51	S.W.	.40	40	af 5	9	af 6	49	3	13	250.
18	W	EMBER WEEK.		29.457—29.417	60—37	N.	.01	41	5	7	6	1	5	14	261
19	Th	Azalea serotina.		29.637—29.398	62—38	N.E.	.02	43	5	5	6	riser	0	6	262
20	F	Sun's declin. 1° 0' N.		29.795—29.708	67—48	W.	.22	44	5	2	6	0	a 6	16	263
21	S	St. MATTHEW.		29.969—29.892	65—42	W.	.02	46	5	0	6	18	6	17	264
22	SUN	17 SUNDAY AFTER TRINITY.		29.673—29.646	62—41	S.W.	.50	48	5	v	41	6	18	7	265
23	M	Aralia spinosa.		29.694—29.646	59—34	S.W.	—	49	5	55	5	7	7	19	266

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 67.3° and 45.8° respectively. The greatest heat, 84°, occurred on the 17th in 1843; and the lowest cold, 29°, on the 20th in 1856. During the period 131 days were fine, and on 107 rain fell.

FLORE OF THE ROMAN CLASSICS;
OR, CATALOGUE OF PLANTS MENTIONED BY LATIN AUTHORS,
WITH AN ATTEMPT TO IDENTIFY THEM.

ABIES.



OPULUS in fluviis, *Abies* in montibus altis." (The Poplar in streams, the Fir on lofty mountains.)—*Virgil's Eclog.* vii., 66.

"Etiam ardua Palma nascitur, et casus *Abies* visura marinos." (Thus too the lofty Palm is produced, and the Fir, likely to encounter ocean dangers.)—*Virgil's Georg.* ii., 68.

"Undique colles incluserunt cavi, et nigra nemus *Abiete* cingunt." (All around, the valleys and a grove of dark Fir enclose the hills.)—*Virgil's Aeneid.* viii., 598.

Pliny, after speaking of another coniferous tree—*Picea*, and saying, "Its branches are of moderate size, extending widely up almost from the root of the tree, and appearing like so many arms," adds, "Similiter *Abieti* expetiae navigiis. Situs in excelso montium, seu maria fugeret: nec forma alia. Materies vero præcipua trabibus, et plurimis vitæ operibus. Resina ei vitium, unde fructus unus *Piceæ*: exiguumque sudat aliquando contactu solis. E diverso materies, quæ *Abieti* pulcherrima, *Piceæ* ad fissiles scandulas, cupasque, et pauca alia secamenta."—(*Natural Hist.*, xvi., c. 10.)—(Similar in growth is the Fir, of which the wood is highly esteemed for ship-building. It grows upon lofty mountains, as if it would avoid the sea. It does not differ from the *Picea* in appearance. Its timber is chiefly employed for rafters and many other domestic works. Resin in it is a defect, though it is one of the *Picea*'s profitable products; yet a small quantity usually exudes from it when exposed to the sun. Whilst the timber of the Fir is very superior, that of the *Picea* is merely used for shingles, casks, and a few purposes of rough carpentry.)

Again, when speaking of the same tree, Pliny says, "Folia non decidunt *Abieti*." (The leaves of the Fir do not fall.)—(*Ibid.*, xvi., 21.)

The Fir tree is still called in Italian *Abeto*, and the especial Fir of Italy is the *Abies pectinata*, or Common Silver Fir. This agrees with the characteristics assigned to it by Virgil. It inhabits the alpine districts (in montibus altis). It is found throughout the Alps, as well as in the mountainous parts of Piedmont. Elevations from 2000 to 4500 feet are those where it chiefly abounds. It grows, also, throughout the whole chain of the Apennines. Its foliage is dark (*nigra abietæ*), and it was from its size and lightness well suited to construct their navy and encounter the perils of the sea (*casus marinos*). So exclusively were their ships composed of this wood, that it was usual to describe them by various applications of the terms *abies* and *pinus*. Thus Virgil himself speaks

of a ship by the term *abies* only (*Aeneid*, viii., 19), and Vallerius Flaccus terms the same *pinus cava*. The wood of this species of Fir is still largely employed for boat-building in Italy. Its branches extend around its stem like so many arms (*velut brachia*), as mentioned by Pliny, and is thus described by Gordon in his "Pinetum"—"It is a lofty tree, growing from 80 to 150 feet high, with an erect stem frequently 6 or 8 feet in diameter, regularly furnished with whorls of branches, which stand horizontal."

Palladius, when speaking of building materials, mentions another species of *Abies* in these terms:—"Abies, quam Gallicam vocant, nisi perlatuor, levis, rigida, et in operibus sicca perenne durabilis."—(*De Re Rustica*, xii., c. 15.)—(The Fir which they call the Gallic, unless it is much exposed to wet is light and stiff, and for dry purposes is everlasting.)

This is probably our Common Norway Spruce, *Abies excelsa*. Gordon, in speaking of it, says, "A fine lofty tree; timber light, elastic [the very words of Palladius], and not very resinous. It is known under the name of White Deal. It is very common, and forms forests on the Alps from east to west, and is principally found at a height varying from 4000 to 6500 feet; is common in Scandinavia, especially to the east of the mountains, and in the German plains, also from the Vosges in France (quam Gallicam vocant) to the Carpathians, and on the Pyrennes."—G.

ROYAL HORTICULTURAL SOCIETY'S FLORAL
SHOW.—SEPTEMBER 11.

THIS, the first grand Dahlia Show, richly deserved the name; for, notwithstanding the absence of some growers (conspicuous amongst whom was Mr. Charles Turner, of Slough, and of whose misfortunes I shall have to say a word presently), the show of that fine autumn flower was both extensive and good in quality, while the other florists' flowers were most admirable, displaying an increased attention both to growth and the obtaining of good sorts, and although the time of year was unfavourable to the attendance, yet it seemed to us that a goodly number were present. But what could be expected in such a glorious September as this? Who would not copy Tityrus, and say, if they could, "sub tegmine fagi?" or stretch their lazy limbs by the shore of old Homer's "much resounding sea," and listen to its sweet music? The arrangements were of the most admirable description, and spoke very highly for Mr. Eyles' administrative powers. I have seen ten times the "fuss and bother" in a small provincial show that was manifested on this occasion.

I do not think I am far wrong in ascribing (with Mr. Beaton) the chief interest in the Exhibition to the collection of Gladiolus, and prominent above the rest (indeed no point of comparison could for a moment be instituted between them and others) were those from Mr. Standish, of Bagshot, who contributed not only the two boxes required for exhibition, but a large collection besides, composed chiefly of his own seedlings. The most pleasing colours and the most delicate markings were combined with good shape; and although I do not think they were quite as good as those at the Palace (how could I when Mrs. Dombrain and Edith Dombrain were not there?) yet the

of not less than 5 feet high, and if anything more is required to keep out fowls, &c., a fence of wire netting placed on the top will answer the purpose. In the corners or centre should be placed mounds of earth, protected from the rain, in which the Rabbits can burrow and find shelter.

I lately had the opportunity of viewing a large court in Sussex. This court was made in an old melon ground about 200 feet long by 120 feet wide, enclosed with eight-foot walls. Along the south wall were arranged under a lean-to roof of asphalt about fifty or sixty hutches, in which were kept the breeding Rabbits; the court was only used for young ones, which were turned out when about eight weeks old, and allowed to remain till four months old, when the bucks were gelded or killed, except those kept for breeding. This court was not paved, which was much against it, as the land was very heavy, and when a continuance of rain fell it was in a bad state; but the proprietor was going to have it well drained, which would lessen the evil. In the centre was a large mound of earth thrown up to the height of 5 feet and several others along the wall; these were all protected from rain by roofs of different descriptions, but the centre mound was the favourite with the Rabbits. The man informed me that on a fine morning the top would be crowded by the Rabbits performing their toilettes.

In making a court the fancier should always endeavour to get a south aspect, and the north and east bounded by buildings, which will save the expense of making the necessary protection, otherwise it would be necessary to have these sides boarded to the height of 4 feet or 5 feet. The south should be open trellis or wire netting. The floor should be sloping; the floors composed of cement and sand have been found to injure the Rabbits' feet by being too rough, and bringing on what is termed sore hocks, the same as with hutch Rabbits that have no litter under their feet: therefore it has been found necessary to cover the floor of the court with sand or gravel about 2 inches or 3 inches thick. This, of course, will require removing either once or twice a year, according to the number of Rabbits kept upon it. Straw, sawdust, or dry leaves would have the same effect, and would all be useful for manure when removed.

The mounds should be placed at the back with a leaning roof to protect it from rain; and also the feeding-troughs should be protected by some roofing, so that the Rabbits can stand and feed without getting wet while taking their food. If the court is connected with the shed in which the breeding Rabbits are kept so much the better, as it will afford additional shelter in wet weather to the Rabbits loose in the court.

I may add that the court is only suited to certain varieties, such as Silver Greys, Himalayas, and all others, excepting the long-eared and the Angoras, both these varieties require warmth.

Rabbits so kept are much more amusing than those hidden in their hutches; and this exercise assists their development considerably, and with young Rabbits reared in courts you will seldom find them attacked with pot-belly—one of the greatest evils in rearing hutch Rabbits. I strongly recommend a court to those whose premises, &c., would allow of the plan being adopted.—R. S. S.

(To be continued.)

DEVIZES POULTRY EXHIBITION.—This is fixed for Nov. 5th and 6th. The prizes are liberal, varying from first prizes of five guineas downwards. There are also sweepstakes for single cocks of all the principal breeds.

REMINISCENCES OF A GAMEKEEPER.

(Continued from page 470.)

I NEED hardly say I had few opportunities of saving money under "manager." Beyond the sum actually necessary for my subsistence, I earned nothing, and when the settlement came more than half the items for necessary disbursements were disallowed at the counting-house. I ought to produce written orders or receipts for every penny I had expended. One of manager's clerks explained to me that five hundred caps implied an shots per diem for fifty days, and manager made a note against it—"Query, what return for all this shooting?" I could not battle for trifles against these "men of the pen," and left my place penniless.

The man is worse off than a gamekeeper out of place. He has

which suited his nature, and he has undergone no training as a labourer to fit him for earning his livelihood as one. Then he is not a favourite with labourers; all men who work on an estate look with suspicion on the gamekeeper: his duty is to watch them. The man who takes a head of game unlawfully becomes his foe. The keeper out of place has to look for opportunities of earning a trifle by taking charge of dogs from one place to another; by acting as loader at a battue; or by attending for two or three days in a week on some townsman who has taken some shooting. The last is very hard work, and yet I have laughed till my sides were sore with suppressing it.

The first arrival. The master hardly out of the railway carriage before he asks for "the keeper" to tell him where the dog is, and his name—eternal "Don" or "Ponto;" and although he does not go so far as our friend Puttington in that excellent Sporting Tour of Sponge's, who traced every bound to the "Beaufort Justice," yet in a long, lean, flat-sided, sharp-noted weed of an animal he will ask you to observe the unquestionable marks of Spanish blood; or that there is just the necessary cross of the foxhound to insure speed and lasting properties.

I should always advise a man who is on the point of engaging himself as assistant or keeper for a time to survey the shooting, or rather the country, and also the man to whom he is about to hire himself. There were many ditches in my part of the country, and, being kept constantly cleaned out, they were deep and wide; it was necessary they should be, as they had to carry off much water in the winter. They had high banks, but no shrubs of any kind growing on them. They were easy enough to jump by any young, active man, but they were sad posers to my temporary master and his friends. They were all arrived at the age when men begin to increase in rotundity, and when they no longer call the attention of their friends to the difference in the tailor's measurement between the chest and the waist. Now the clayey sticky bottom of the ditch was always thrown on the opposite bank, raising it considerably, making it stiff fencing for those unaccustomed to it. My duty was to get over and hold out a long stick for them to grasp when they jumped, and I was then to pull them up. How I have laughed within myself when a good fifteen stone has put on all his steam, gone at the ditch with a rush, cleared it, laid hold of the stick, and alighting rather too low he has slid down to the bottom, and alighted in six inches of water, accusing me of giving way. I have watched the countenance as I stood on the bank pulling with all my might. Concentration of strength and energy to enable the toes to do the work of the feet, and to support the body; alarm as they began to give way, frantic pulls at the stick, and at last, when the down-slide had begun, blank despair and resignation. But others, and still more amusing were those who with youth, health, activity, and everything else on their side, cannot shoot.

I was employed for two months on a manor that was let to a number of young men, all friends, and all men of property. It was a treat to see their appurtenances. Every description of gun and case; all sorts of caps, powder and cartridge; dogs out of number. All that money can do to kill game was done; but none of them could hold straight enough. Many a time they have had me in the room after dinner in the evening to explain to them the whole theory, and they have declared the following day they would kill everything. They shot as before, and then it was amusing to hear the reasons assigned for missing. Some knew they shot in too great a hurry; others knew they shot under the birds; some were so confoundedly nervous; but all knew why they missed, and yet they could not remedy it. The average of their killing was one shot in twenty, except on great days when we used to beat the woods. They had one virtue—they were very liberal, and I earned much money with them; but it was only for a time, and I was soon reduced very low.

About this time I heard a second keeper was wanted in an adjoining county. I started for a thirty-miles walk early in the morning. I was buoyed up with hope, because I knew it was one of those families where servants remain a lifetime. Weary, hot, and footsore, I got there in the evening. I soon found there was no manager here. The servants were good easy-going men, who filled out their clothes. I had trembled all the way lest the time consumed in walking there might cost me the place, by enabling some more fortunate man to get there before me. It was with trepidation I approached the head-keeper's house. It was a nice place, well planted with flowers, and evidently well furnished. It had an air of comfort and well-doing about it, that made me ask myself whether such a place would ever turn up for me. I was introduced for him, and was told by a stout lad who

described; besides which this edging is expensive where any great quantity has to be done. I can, however, vouch for its durability, as I have not perceived the least flaw in what we have of it, which has been laid some seven or eight years and exposed to all weathers. The maker has also other patterns; but the plain round-topped looks as well as any.

Many years ago the kitchen-garden walk edging at Eridge Castle, at the Earl of Abergavenny's, was laid with timber cut to a size somewhat like that of the cement edging described above; but, of course, in such a position just at the surface it soon decayed, and, I believe, has not been renewed: timber, therefore, cannot enter into competition with anything excepting for present use, and to meet a sudden emergency, or in isolated cases where other materials are not forthcoming.

Dressed stone is, perhaps, the best of all edgings where it can be had, and I have seen a kitchen garden done with it, and look exceedingly neat; but I fear its expense will prevent it coming generally into use, besides which it is only in places where stone is plentiful that it can be had, and only some description of stone is suitable. The flat slabs called Yorkshire paving are not fit for this work; for, being laid edgewise up, the moisture easily penetrates, and frost often shivers the stone—in fact, it is a general rule in building matters to lay each stone in the same position it was found in where durability is the object sought after. Dressed stone will, therefore, I fear, not come into general use, except in the localities where it is found.

A rough line of flints half imbedded into the ground and half out often serves as a useful edging in places where rustic work is appropriate, and even in dressed ground it is sometimes made to assume a conspicuous appearance by being painted white. As an example of this the names of the railway stations on many of the lines south of London present as true a feature as can well be given in this way, the letters forming the name being marked out on the sloping bank of black coal ashes or small coals, the flints themselves forming the letters being painted white, and each letter about 6 feet wide perhaps; but as this system of naming stations, which I believe originated on the South-eastern line, has become general in many other districts, I need say no more on this head than merely point out flints as being suitable in some instances of forming edgings in gardens, and have been so used long before railways for passenger purposes came into use. Painting them white is, however, not always done, and some people of good taste dislike the glare it presents.

Useful in a similar way, and certainly much more ornamental as requiring no painting or colouring, are the rough pieces of spar or quartz found in mining districts; the clear glitter its angular sides present to the sun renders it highly ornamental. Unfortunately, however, it is not to be had in sufficient quantity to meet other than a local demand; and I have only seen it in use in Cumberland and Derbyshire, but believe it to be plentiful in Cornwall and elsewhere, but I have not seen it used there. A most excellent and ornamental walk is often made of the same material in a broken state; and, if my memory be right, those at Trentham, and some, but not all, at Chatsworth were also of this kind.

Fancy designs in brickwork or rough earthenware are common enough; and though some look tolerably well, the bulk of those I have seen are in my opinion exceedingly ugly—a clumsy attempt to represent basketwork, perhaps; or some pattern of gable enrichment; or, it might be, some whimsical design of the owner contriving a something which no ordinary ingenuity could keep in order, and, leaning inwards and outwards, offend the eye as much by the bad setting as by the foolish pattern, proving that high edgings in this way are very unsuitable. By far the best design I ever saw in this way was a rounded bead representing a rope of about 2 inches in diameter; but unfortunately the foundation of this rope was not sufficiently bulky to support it in a uniform line, and it was difficult to keep in a correct line; but this defect might easily be overcome by appending this rope or cable to something like the consistency of a brick, and then it would stand. The lengths ought also to be not less than 2 feet, if they could be made of this size; but I believe this cannot well be done with accuracy with such a common material as brick clay, but I throw the hint out for those having the means to try what they can do. A sort of mortise-and-tenon joints ought also to be formed so as to fit into each other when laid down. Many years ago the late Mr. Loudon called attention to a description of edging-tile, made, I believe, at Aberdeen, exceedingly hard and durable; but I fear its expense or some other defect has prevented it being generally known, as it has

been lost sight of. Some other makers have at various times presented different articles in the same way for public patronage, but nothing has been yet issued that has received anything like general support.

To a limited extent I have seen a cast-iron edging of a fanciful pattern that looked tolerably well; but its expense must preclude its coming into anything like general use. A similar remark holds good in the matter of slate. Although in the districts where these abound I have no doubt but they can be had at a reasonable rate, and if not too slender must look well and answer every purpose. I have, however, little hope of seeing slate edgings generally adopted a hundred miles from where they are procured, though in particular cases they may be had and found to answer.

By the above it will be seen that I consider plain bricks the best and cheapest edging we yet possess for the generality of purposes where a live edging is either not available, or where it will not live; and some edgings of this kind that we have had down ten years and more look well still. The only likely thing to move them when placed in a shrubbery is the roots of trees or shrubs getting under them and lifting them up. This force no description of edging could resist, and bricks are easily relaid again. Moss will collect on them, but must be scraped off; and the mere fact of the brick becoming dull is an advantage, as a bright glaring red is not wanted, and betrays the article used. For convenience our kitchen-garden walks are also laid with bricks in the manner described, and they have the advantage of allowing a something to be planted inside them as well; and some compact-growing plant, as *Arabis variegata*, makes an excellent edging to grow against this line of brickwork. And being taken up in autumn to plant in flower-beds, then denuded of their summer occupants, the bricks remain a still permanent and useful edging ready to allow another crop next year to partly overshadow them, or to answer the purpose of an edging without such help.

The uses of a plain brick edging are far from being told yet, for in the geometric garden or parterre it is equally serviceable. Here, however, it is not put forth in such a conspicuous way, but made to act in a more subordinate capacity as follows:—Edgings of turf are well known to become jagged and uneven in spite of every care in clipping the fringe of grass that overhangs the edge; and to cut these afresh with the spade, commonly used for that purpose, every time they become so uneven cannot well be done, especially in dry weather: hence the propriety of having an edging that requires no such cutting. With this view I have, therefore, had some edgings laid down exactly in the manner described with brick, and turf laid level with the top edge of the brick or a little (perhaps half an inch) above it, the object being to get out of the way of the scythe, and at the same time have the slanting side of the brick as an edging to the walk or flower-bed. Compartments of turf so edged cannot be otherwise than correctly clipped in an even manner, and the brick is scarcely seen. If time and other things allowed, I should like to see every walk and flower-bed so treated, and nothing can well look better and be more permanent, it being no easy matter to damage an edge so formed. And assuming weeds to be troublesome on the walk, salt or any other chemical substance might be used to destroy them, without there being any danger of injuring the edging, which is too often the case when no such protection as a brick exists.

In advocating the brick laid in a diagonal direction as the best and cheapest edging where Box, Thrift, and other live edgings are not available, I by no means assert it to be the best that can be adopted; on the other hand, I invite mechanical men to turn their attention to the requirements of the case, and give us something better than we yet possess. And for my own part I am strongly impressed with the belief that something of a cable pattern, having a good sturdy foundation, to be the best that I have seen. A fancy moulding rarely looks so well on a large scale as some simple design, that I do not dislike the plain rounded top; but something more becoming than anything we yet possess will doubtless be forthcoming ere long. One thing must be insisted on—that is, cheapness; for expensive objects are out of the reach of the many, and when much edging is required it will amount to a large sum. Another thing must also be borne in mind—that although long lengths are suitable for straight and continuous bordering, short lengths will be wanted to go round curves and other places. In this respect we have found bricks come in very handy; for by being broken in two and placed with their ends up, a sharp curve may be turned pretty well.

elsewhere, is made at Hampton Court to last out the season; first, by thinning off part of the flower-shoots before they are just at their prime; and secondly, by not allowing it to form a seed-pod at all—or, to understand the thing properly, say they do the evergreen rock Alyssum at Hampton Court as everybody ought to do their Mignonette when he or they wanted to make it last out the season in bloom. Then the two native Lamiums, the purple and the white, are both spring bloomers, and are up at their pitch about the time of bedding out the Geraniums. Then the moment they begin to decline let their whole herbage be cut down close to the ground, and they will be up again before the Verbenas cover their beds, and look a genuine healthy green for the rest of the season; and in an ordinary one, the two will bloom on occasionally the summer through. The Lamium is one of the best to bed under trees. A perfectly new bed, and a most interesting one, is now under experiment there, and there are upwards of fifty kinds of out-of-the-way and hardy plants under consideration in the back-stair court; among them is the *Scrophularia nodosa variegata*.

But about the new bed. It is a Geranium-bed all over—the old Geranium sanguineum struck from autumn cuttings just like Verbenas, but in the cool. Hundreds of little plants of it were planted out at 3 inches or 4 inches apart in the spring, and, if you believe me, the whole bed is one-third in bloom, or was so last week; but without flowers it makes one of those neutrals which are so useful in some situations. Of course every seed-pod is cut off as fast as it comes, also the flowering-shoots are stopped once or twice while the bed is in its natural bloom—that causes it to bloom on occasionally through the season, just like Alyssum saxatile. All the beds there have been planted this season each with one kind of plant only—no edgings and no contrast, save that of one bed with that, or those nearest to it, and for that style of flower garden the plan is the best that could be adopted. The strong colours as yellow and scarlet, and the neutrals as *Stachys lanata*, and many more such are so disposed at intervals as to make an obvious and easy combination wherever a lot of beds are seen at one view.

It is a very difficult thing to manage the colours as we have them in our day in a Dutch garden like that of Hampton Court, where the plan is some centuries old; and the best planting in the world is one-half lost to a stranger from not seeing more than a very few beds at one view, owing to the trees which occupy the run of all the beds. 'Tom Thumb' is the best Scarlet Geranium now at Hampton Court; but there are many kinds. Punch is mad there, and does no good at all. Dennis' Alma makes one of the best telling beds within twenty miles of London after the angle-bed of Punch at the Crystal Palace. *Ignescens* major of Sweet's Geraniaceæ is as good, if not more telling, at Hampton Court than *Ignescens superba* at the Crystal Palace. There are two good beds of Miller's Nosegay Geranium, called by them sanguineum. This is not yet at the Crystal Palace; but Mr. Eyles made his first two beds of it on entering on the South Kensington Garden. It makes a very good bed, but not such a bright one as the Crimson Minimum Nosegay—the best dwarf bedding Geranium we have for a bed. The next oldest Nosegay, the Fothergilli, which put the bedding of the Crystal Palace in the first rank for the first time this season, is not yet at Hampton Court; neither is Mrs. nor Miss Vernon, which match so well on the Rose Mount.

There are two distinct kinds of *Perilla nankinensis* at Hampton Court; every leaf on one is as plain as a Lime leaf, the other is the common one. There must be several thousands of plants of *Perilla* there, and not one of them failed or is behind those at Kew. There are two model beds in two different parts of the garden to show how to dispose of colours in match pairs from a key, or centre point, or bed; each of these has fifteen rows across it. Flower of the Day being the centre or key row, then seven duplicates correspondingly on the right and left. I shall now give the colours as they are put, and mention a lot of the beds, and the more prominent and out-of-the-way of them, beginning at the front of the Palace and going to the left. The 1st bed is of Scarlet Geranium under a dense Yew doing capitally. 2nd, *Cineraria maritima*. All one bed of 3rd, all *Perilla*, the white of 2 contrasts, with the scarlet of 1, and the black of 3 the same. 4th is *Tropeolum elegans*. 5th, *Iberis sempervirens*, the next General Simpson Verbena, then Variegated Alyssum, followed by Purple King under a large tree and not looking comfortable; then *Calceolaria integrifolia*, or some variety of it, the first clear yellow in this run; then *Heliotropes*...

spring; then a bed of standard Roses; but Kew and Hampton Court want a leaf out of the Crystal Palace book about Roses.

All their standard Roses are most perfectly ridiculous as objects for effect. But there are, at the least, fifty kinds of first-rate Roses which could be grown to the height of these standards on their own legs from the surface of the ground. I say not on their own roots, because that is the best way; try the second best way, first in order to get one step beyond the present, or the worst way for that kind of soil and subsoil. One step at a time is the surest way to get up or down the ladder.

But the next bed after the foolish dry sticks with a little bunch of Rose-shoots stuck on the tops, is a whole shining bed of *Stachys lanata* done to a turn of the scale; next, a bed of Verbena Andre, the best red purple before the dark Purple King; next, *Calceolaria Kayii* and dwarf Marigold. This Marigold was the best plant in the catalogue twenty years since, to be kept in reserve for filling up where something failed, as it will remove any day of the summer or autumn, and be as fresh and flowery to-morrow as if nothing had happened.

Which is the best and next best for that work now? I think the best is the double of this same dwarf Marigold, and the second best the single of the same; but, perhaps, I am wrong, being such a while out of the "back premises," and not knowing how they manage that department of late. Now, pass several beds and we have the model for planting beds—the bed with fifteen rows. Flower of the Day is the key row in the centre; then Andre Verbena in single rows on each side of the centre; then two yellow *Calceolarias* to match one on each side; two *Perilla*, ditto; two Scarlet Geraniums, ditto; two Variegated Alyssum, ditto; two Purple King Verbena the same; and the two outside rows yellow *Calceolarias*. A similar bed is as far off from the front door of the Palace on the other side just to match. A bed of the rasp-leaf or pinnatifidum Geranium, with an edging of Prince of Orange round it, is the only bed with an edge there, except its match bed or beds. Madeline, an old light lilac Verbena, makes a capital bed of a very scarce colour. The plain green Alyssum saxatile doing well where no other plant could live, under a very dense old low-headed tree. Mangles' Variegated is the next for such a confined and out-of-the-sun place; *Ageratum* the next; Zelinda Dahlia next, but it must be trained down under trees and that completely spoils it. But the first beginnings at the Crystal Palace led the way to the most ridiculous style of barbarism by training down any mortal thing till their rows were bare as a barber's pole; but the rage gave people a sickening of that ridiculousness, and we shall soon get rid of the polish training.

There is hardly a plant trained low down this season at Hampton Court, except some few under the trees which could not be avoided. It is sometimes better to give tether than advise gardeners to shorten sail. The thing will more surely take a better turn if you allow them sufficient rope and never praise their faults. Kingsbury Pet Geranium is one of the very best under a Yew, where the sun never touches a petal of it. Hendersoni, the white seedling of 1846, is still the best white there and the best of the Horseshoe or Zonale for under trees.

A white Verbena with the same habit as Purple King sprang up from self-sown seeds there this season, and it promises to take the same position among whites as Purple King does among all the rest. In 1852, Mr. Scobie raised Purple King at Lord Holland's, at Kensington, and no Verbena has ever had such a run or such a scope. I recollect writing to a great lady about it when I first saw it before it was out, and I now write to you about this white, which might be an albino from the Purple King itself, and which I think will have an equal run. I had forgotten that Général Pelissier Geranium had Nosegay flower-stalks till I saw a good bed of it there. The little *Santolina* I noted from Kew last autumn, is there by the hundred now ready for next year to make a match for the Lavender-bed. But I must conclude with saying the old hedges of Laurustinus and the very large old plants of it in the "lower garden" below the ramparts, escaped the frost of last winter and hardly lost a leaf. But if ever I draw up a "summary" of this summer season I shall have a score of things to say of Hampton Court.

D. BRATON.

TRICOLOR-ZONED GERANIUMS.

I AM exceedingly sorry if I have maligned this pretty-foliaged section, but can assure "Z." that I have grown them (I believe nearly all) and that has been let out, and that I have seen

them in as many gardens as most people, and that notwithstanding his remonstrance I must still state that my experience is the reverse of his. I do not for a moment question that the markings will be more vivid (all colour becomes more intense by exposure). Thus, I have at this moment a plant of *Celosia surca* turned out, and its later blooms are a deep orange; but then they are so soon spoiled with rain, and in the foliage being kept clean it seems to me their success consists. I have never seen them satisfactory out of doors in this respect; neither are they as strong-constituted as the ordinary variegated *Geraniums*, and hence I have never seen them used for beds. Has "Z." ever tried them in this way or as part of a ribbon?—D., *Deal*.

WINTER FLOWERS IN ROOMS.—No. 1.

DOES any one wish this year to have a gay display of sweet flowers at Christmas? If so, I must beg to hint to them that now it is high time that they should prepare for making it.

Last year I tried a variety of very pretty flowers, growing them in various combinations, and without any means of advance whatever (as far as those I speak of were concerned), beyond a cellar-shelf and a large south window in a room where the temperature was not below 35° at night (except, perhaps, 2° on about two of the very coldest nights). These advantages, it is very evident, are not uncommon; and though the room I speak of was seldom very warm—hardly ever above 50°, an excess of heat would be more easily dealt with than an extreme of cold. By the windows, for example, it is rarely over-warm.

I am sure no one without seeing it would believe how gay my room was. Large dishes of most brilliant flowers succeeding each other on at least three tables; not to speak of the *Hyacinths* in glasses, or of the plant-cases, which are another story. Now I am preparing my this-year's display; and so encouraging are the testimonials that my little attempts at describing bouquets and cut flowers have already met, that I hope a few hints on preparing growing bouquets may not be unwelcome.

I do not think myself that mixing many colours ever answers well; and writing chiefly to ladies, I may use an illustration which they will enter into. Taking shades of wool—not for a flower, but merely for working into a formal pattern—have they ever found pink, scarlet, crimson, and brickdust colours to mix in well together? Will purple and Eugenie blue, mauve and magenta, amalgamate at all? Or what is the effect on blueish-white—that most exquisite shelly tint, I mean, like the white *Gloxinias* with the purple eye—on pinkish-white and on ivory white, of being contrasted with the perfect snow?

All ladies know that these colours will not do together. They may make their five, or seven, or even perhaps nine or eleven shades of the most intangible gradations of depth; and the more the shades the softer and more delicate will the colour be. But these are shades, not colours, and wonderful indeed is the difference made by this.

I want it, therefore, to be laid down as a law, that where one colour is, no different form of the same colour is to be introduced—only shades of the one colour there, and other distinct colours which harmonise with it well.

With a crimson set, for instance, one has pink, and one of the very prettiest sorts of pink too; but that is in harmony, as a shade of crimson. And then for the white to go with it? A pinkish-white, of course, to harmonise with the rest.

Harmony here, on the contrary, it seems to me, means contrast; just as in music scientific people tell me you must have a discord to produce sweet sounds.

May we, then, take for granted that in shading flowers ladies will bear in mind the laws of their German wool work, and turn that said work to some account of some sort? If so, we may pass on peaceably; only I may remark that as absolute proof is necessary to compare precise shades, I shall hereafter in a few instances give the lists of the few flowers I have at present retained shaded lists of, duly grouped together; though, as my observations for this have been very limited, I think that any one meaning to make up shaded sets had better explain their wishes to the seedsmen they employ. In some catalogues of bulbs, especially, white includes blush and the paler shades of cream colour; the seedsmen, of course, understanding this, and generally knowing the exact shade themselves.

To proceed, then, to the work at this time in hand—and indeed it is a work that must not be long delayed.

There are a great many who think that *Snowdrops* and *Crocuses* are unhappy things to grow because they do run up so; and others, I know, have still a notion that *Tulips* are large flaunting sort of things not much to be desired.

Hyacinths, again, are all in vogue for glasses, and miniature *Hyacinths* for the children's playthings; but they are very lucky children, I think, who get such gems. Last year I shared with the children, and never did I see anything more pretty. Right glad was I this year to see my four old friends in their old place again in a Florist's list. The four I chose last year and have repeated this, in an extended form, are *La Candeur* and *Grand Vainqueur*—both of the purest white, one with long waxen bells, and the other with reflexed petals; *Diebitich Sabalskanskoï* and *Ami du Cœur*, both of a pretty rose colour. These little beauties are only 3s. a-dozen; and the show, therefore, that 1s. 6d. invested in them will make is something rather striking.

I do not approve of mixing them. A glass milk-pan which I planted yesterday has six of *Grand Vainqueur*, and in the centre three of *Diebitich Sabalskanskoï*. Nine *Scilla sibirica* are dotted down amongst them; and eighteen *Snowdrops* are also intended to droop their graceful heads and wave their slender foliage round the more brilliant wreath; into which, moreover, they are sometimes dotted.

A very pretty soup-plate may also be arranged to drop into a bowl, or to be surrounded with one of the wreaths of green I have so often spoken of. Such a plate would be very pretty with one (white) *La Candeur* in the centre, three (pink) *Ami du Cœur* in a sort of triangle round it; and round this again a *La Candeur* outside each, of the three *Ami du Cœur*, and an *Ami du Cœur* again between each of these. Any space left I simply crowd with *Scillas* and *Snowdrops*, if possible placing some *Scillas* just about the centre between the triangle and the outer wreath of *Hyacinths*, and *Snowdrops* filling up in between the bulbs. The *Scillas*, too, are so pretty mixing at the edge.

A third device is of three pink *Hyacinths*, *Diebitich Sabalskanskoï* for instance, and two white ones—say *Grand Vainqueur*; the three making a centre and two sides, the two filling up the places opposite each other. I had last year one of three pink and two white, and one of two pink and three white, and they did not look liney and were extremely admired. *Snowdrops* and *Scillas* again filled them up all round.

These all blossom so nearly together as to make a very good display. At the same time the *Scillas* begin so early, that even while growing up the plates look really pretty; and mine went on so long, that, after having seen the *Hyacinths* with them fade—and they were long in doing so—these little flowers went through many transplantations, filling up nooks wherever they were wanted.

I should mention that no sooner did one spike of pale blue flowers fade than I cut it off immediately close down to the root, and then directly up another came. Neither *Snowdrops*, *Crocuses*, nor *Scillas* were ever higher than they ought to be in the open air; only being shielded from smoke or rain, their exquisitely fresh appearance was something very charming. My plates, of course, were covered with moss before the flowers came out.

This season I am forming some plates of double miniature *Hyacinths*, with the design of prevailing on them to last yet longer than the single ones did last year. In their case the *Snowdrops* and *Scillas* will be put in a few days later, or *Van Thol Tulips* will be mixed up with them. I think, however, these may as well be left for another week to describe more fully.

Only, on a suggestion given last year by an authority in this Journal, I venture to advise any one who intends to have the sweet little red *Van Thol Tulips* double as well as single, and any one who aims at imitation *Roses* in months when *Roses* are not, and any one who is ambitious of lasting cups of the palest wax shading from rose to white, to place in a box or in a plate of slightly moistened sand, as many as they wish to have of the five kinds I name. Very few, probably, will begin to grow at first; and as one never knows which these very few may be, perhaps one wastes a good deal of trouble on those which would have done quite as well for a good while longer lying in a box. By this means one can arrange them fairly to run together when it comes to dishes or to potting. In the first instance, therefore, and that is now, make the bulbs stand as nearly as you can on a layer of dampish sand, and keep them in total darkness. The five kinds I name I may venture to vouch for in rooms—single red *Van Thol*, double red ditto, single rose and white ditto, *Rex Rubrorum* and *Imperator Rubrorum*, double crimson *Tulips*

Any suggestion to save the quantity of eggs consumed by the young birds would be most acceptable, as the older birds most freely partake of the food provided for the nestlings.

[I consider it would be better to put one cock and four hens in the proposed aviary than two cocks and six hens in so small a space; and as the season is so far advanced, it would be better not to put the cock in until the spring, but a Goldfinch would do no injury at present.

I know of no better food for the old to feed their young on than hard-boiled egg, bread, and maw-seed, with plenty of fresh green meat.—B. P. BRENT.]

THE JAPANESE OR AILANTHUS SILKWORM.

THIS species, which M. Guerin Meneville has naturalised in central France, is reared in the open air, and its food—the leaf of the Japan varnish tree—prosperes in the poorest soils capable of producing no grains, vines, or grapes for pasture. This worm demands very little care; it is exposed with impunity to violent storms, has not been affected by the epidemic disease so fatal to the silk culture in Southern Europe, and may be destined to furnish for western countries, as it has for many centuries in China, the silk of the people. At the château de Leygnattier, the residence of M. Aiguillon, a distinguished agriculturist of Toulon, a part of these worms were raised in a close cabinet, another set in a greenhouse well aired both day and night, and a third division in the open air upon hurdles left out of doors, and on trees merely covered with a netting for protection against birds.

At the château de Coudray-Montpensier, also, Count Lamotte-Baracoe has had these silkworms reared in the open air on magnificent clumps of the Japanese varnish tree 12 feet to 16 feet high. The cocoons obtained from those kept exposed to all weathers are larger and richer in silk than from those which have been protected or confined; and at Toulon, as at Coudray, the worms have undergone several violent storms, with beating rains and furious gusts, without appearing to suffer in any way. At Coudray, after a hurricane, July 20 and 21, 1859, which broke or tore up many trees, and carried away the suspension bridge of Langeais, over the Loire, they were found next morning with the rain flowing over them, eating and wearing their cocoons on the trees where they had maintained themselves safely.—(*Prairie Farmer*).

WASPS.

CONTRARY to the established ideas on such matters that these destructive insects only visited us in large numbers when Plums were plentiful, they are certainly this year as numerous as any season I ever knew, and as luscious, juicy fruits are not forthcoming, they have attacked apples and pears—not ripe, mellow ones only, but hard and dry fruit of any kind that is to be had. Tomatoes they also attack, which is an unusual event, and I expect those having bees must keep a sharp look out, or their enemy, the wasp, will wage a destructive war with the industrious denizens of the hive. Destroying the nests by all known means is all that can be done now, and baits or traps for catching the wasps must also be put in requisition. One of the best of small hanging-traps is of glass, the top having a sort of funnel tube running downwards like the neck of some ink bottles that prevent the ink spilling when the bottle is turned on its side or upside down. These wasp traps have a cork-hole in the bottom to take out the dead wasps and liquid, which frequently requires emptying. It is astonishing what numbers are taken in a day.

Wasp nests in the ground are destroyed by home-made fuses, which are made by folding a little brown paper tightly round a stick as thick as the little finger, and then withdrawing the stick and stopping up one end. The tube is filled with a mixture of one part gunpowder and three or four parts of sulphur, and brimstone pounded fine. The whole being put in dry, the fuse being lighted at one end, and put into the hole will burn quite half a minute, searching out every cell, and on a time stupefying the wasps sufficiently long to enable them to be dug out and the nest destroyed. There are other methods of dealing with them as well as the above. Turpentine poured into the hole is said to stifle them, and a piece of tallow or soft rag dipped in turpentine and put into the hole will effectually prevent them from coming out.

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RHUBARB WINE.

A SHORT time ago I saw a letter in your Journal from a correspondent, who, writing upon the above subject, complains that amongst all the suggestions about bruising or not bruising, &c., what was wanted for him and many others was a "good receipt for making rhubarb wine."

Taking an interest in the making of the wine for my own consumption, I have taken up my pen to give your correspondent, and others who may feel interested in the subject, the following receipt.

First of all I must beg your acceptance of a sample bottle, which I here enclose, that you may judge for yourself whether the quality is such as you can recommend; and if you approve of it to transfer the receipt to your columns. The wine from which the enclosed bottle was taken was made in August 1860.

On the 18th of that month 22 lbs. of rhubarb stalk were cut small and bruised, and 2½ gallons of water added, and stirred every day for a week, then strained and three-quarters of a gallon more water added to the fruit, and left to stand two days, then well squeezed in a lever press. Fourteen pounds of best raw Jamaica sugar were then added to the juice, and fermentation began the next day. On the 1st of September it was put into a four-and-a-half-gallon cask, leaving about half a gallon to fill up with as the yeast worked out at the bung-hole, and on the 1st of November the bung was laid lightly on, and on January 1, 1861, the wine was racked off and the cask rinsed with some of the wine, after which it was again put in the cask, and a bottle of Bett's patent brandy added, as well as three pennyworth of burnt sugar for colouring; then closely bunged down, and bottled the 12th of last month, producing two dozen of good wine.

I need hardly say all the vessels, &c., used, should be perfectly sweet and clean.

The cost will be somewhere about 7½d. a bottle to those who grow their own rhubarb.—JAMES ALLEN, *Austin Street, Lynn, Norfolk*.

[Without any exception this is one of the best samples of homemade wines we ever tasted. We can even go further, and say truly that it is equal to some of the best of the luscious foreign wines. A little more age will make it still more superior. If any of our readers are successful in making superior malt and parenip wines, we should be glad of samples and the recipes for making the wines.]

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CROSS-BREDS FOR EARLY (J. Forbes).—In your northern climate, I recommend Cochon-China pullets and a Dorking cock. You will find as good for table as if you had Spanish pullets, the chickens w larger and hardier, and you will have eggs in winter.

DUBBING GAME COCKERELS (F. Bailey).—Dubbing is imperative if you hope to gain a prize. The judges would pass over the pen if the cock were not dubbed.

SPANGLED HAMPOSH COCK'S TAIL (A Subscriber, Glasgow).—His tail ought to be erect and arched. Your cockerel's tail drooping very much arises either from an injury or deformity of the spine.

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POULTRY.

Though the supply of poultry is very small, it is quite equal to the demand. Grouse and Partridge sell well.

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close by. On attempting to walk forward, the mischievous article, unwilling to surrender its hold, pulled over the hive, and an angry troop of bees came buzzing about the alarmed and unhappy fair one. Clearly no time was to be lost, so, mustering up her courage, she rushed to a pond in the enclosure, and plunged overhead, to shield herself from her exasperated foes. As it was, however, the poor girl was very badly stung, and had to be removed to bed. It was expected that she would quite recover in a few days.—(*Preston Herald*.)

HEALTHY HOMES FOR DOMESTIC ANIMALS.

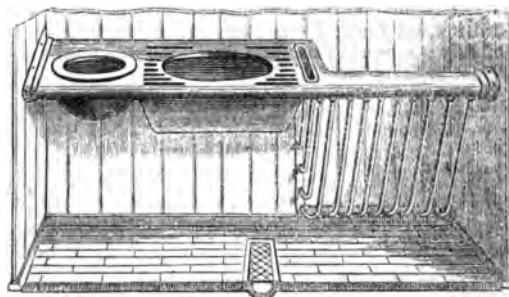
DR. JOHNSON has said that "Human life is everywhere a state in which much is to be endured and little to be enjoyed;" and certainly this remark can with much propriety be referred to our domestic animals; creatures which are more or less rendered subservient to the use of men, by whom they, in order to obtain from them the commodity for which they are kept, are placed under the operation of certain artificial states, and in many instances under circumstances most baneful to the animal economy, and consequently detrimental to the well-being of our stock.

We are well aware that a hunter must be artificially treated in order to fit him for the severe physical exertion he is forced to undergo during a run with hounds, and that a milch cow, especially the one located in our metropolitan dairy sheds, is converted into a machine for the production of milk; at the same time it is the duty of merciful man to consider well how he deals with the tender life of dumb creatures committed to his charge by an All-wise Providence; and this matter must be investigated on sound principles, and the conclusion arrived at must be based on deep scientific research and well-weighed practical observation. This consideration, therefore, involves the necessity of the reasoner being acquainted with the habits of animals, whether placed in a natural or an artificial state, and of his being versed in a knowledge of physiology and chemistry, appertaining to an elucidation of a hygienic system. The question may be put, What is to be understood by hygiene? Hygiene is a system by means of which we are able to indicate both for ourselves and animals, first, the best food to be taken for consumption, or that which is most calculated to promote health; and, secondly, to select habitations so situated and arranged as to insure perfect drainage and ventilation, or, in other words, those built on scientific principles, and with sufficient human foresight so as to procure health and consequent happiness.

By a due attention to these laws, "Life may be lengthened, though death cannot ultimately be defeated;" and in applying this remark to our domestic stock, we must consider where and how stables should be erected so as to insure perfect drainage and ventilation. Stalls in our opinion should not be less than 7 feet wide; the floors of which should decline, and that very slightly, from the side "partitions" to the centre, from which point the liquid runs away through a long underground gutter to the main drain. By effecting the immediate escape of liquid, it is easily understood that decomposition cannot go on within the stable, and, consequently, the presence of certain deleterious gases, such as ammonia, sulphuretted hydrogen, &c., is in a great measure prevented. We recommend a slight decline from the partitions and main wall in front, because we have noticed the ill effects, and in many instances disease, arising as the result of the floors of stalls being built on a decline from the main or wall in front to a surface gutter, which formerly existed, and sometimes even now is met with behind the horses' heels. In this stall so constructed, the inmate was obliged for hours together to stand uphill—i.e., with his forelegs in a more elevated position than his hind; and that this continued posture must be wearisome to horses, and we will add, injurious, can be seen by animals so located hanging back, as it is called—i.e., placing their hindlegs near the main surface gutter, so as to bring their forelegs on a plane surface, and place their bodies in an easy and at the same time natural posture. Any position if persisted in for any length of time becomes irksome and laborious; out ten times worse is it for the poor horse so situated, which has no alternative but to lie down and stand on an inclined plane—i.e., in a position calculated to produce contraction of the ligaments at the back part of the knee, and thus set up the disease known as over at knee. We are no advocates for stalling horses without due regard to our duty to procure the best possible

of nature; and common sense indicates that loose boxes are to be preferred to stalls as habitations for our horses. In these locations our animals can range about and stand or lie down in almost any posture they like; their legs do not go, and life itself by these means could be rendered pleasant. But stalls or loose boxes if not ventilated—i.e., if they are not constructed so as to admit the ingress of pure air, and the egress of impure or spent gases, are likely to produce in horses diseases most fatal, such as glanders, farcy, ophthalmia, &c. These maladies were common some years back, but lately, owing to a better attention to the laws of hygiene, have become comparatively rare. Many systems of ventilation have been tried, but none have succeeded so well as Muir's Patent Four-points Ventilator, which consists of a cylindrical tube, divided into two parts by a mid partition, or diaphragm, so arranged as to allow the escape of the impure air on one side and ingress of pure air on the other. By this means a continued stream of fresh air is supplied, replacing the spent gases, or those unfit for respiration, and consequently injurious to health.

Having insured good drainage and ventilation for our stables, our task is only partly accomplished, since we must now select the best stable fittings. The days were when stable appointments were so ill-contrived and painful for the reflecting horseman to consider, that Messrs. Cottam & Hallen introduced and patented stable fittings, and so well constructed were they that throughout Great Britain they have been adopted with great success and profit to the patentee. Since this patent was invented several of greater or lesser value have appeared, all presenting, with a few trifling exceptions, the same features as the original invention of Messrs. Cottam & Hallen. Lately, the spirited firm of Messrs. Musgrave & Brothers, of Belfast, have introduced stable fittings—fittings carried out on the same plan as the original patent, but certainly improved upon and added to with success. These stable fittings consist of three open stalls and one loose box. In the loose box we object to the hayrack being in front and above the horse's head, instead of below it, as seen in the annexed illustration of Musgrave's new Patent Manger, which is fitted in the stalls. In this the opening at



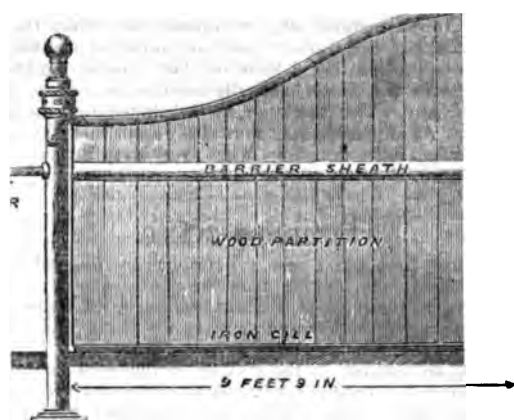
the top of the hayrack is made very large, and as there is no back rim, the horse is able to get his head freely down to the bottom. The manger or mash-tub has a footguard, which effectually prevents the horse throwing out his oats or mash, and yet lets his breath escape while feeding. The water-pot has no brass plug in the bottom, but turns upon a pivot, and discharges the unused water through a grating at the back, keeping the pot as clean as a china bowl, and the water always fresh. If oats happen to be in the pot they are retained while the water passes off. Any one who has used the common water-pot, with a brass chain and plug in the bottom, which frets the horse and soils the water with verdigris, will see in this, although so simple, a very great improvement.

The tying apparatus is a great improvement on the original patent. In Musgrave's the horse is not fastened to the manger, but the leather strap or chain (the former being the better) works through a long slit on the top plate, which allows it to play as freely as if no manger was before the horse.

Another improvement introduced by the Musgraves consists in a sliding guard in the form of a gridiron, which, by resting on the top of the hay in the rack, allows the horse only to remove a mouthful at a time, and by this means prevents waste.

The sliding bar for confining each horse in his own stall in the absence of the groom, on account of its use is a work of experience and foresight. The annexed diagram shows a stall division fitted with the patent safety barrier. In the centre of

division is inserted a strong iron tube, marked "Barrier" and inside of this there is a sliding barrier, which goes out through the heel-post, with a knob on the end. The



as he leaves the stable pulls the barrier out of each division and fastens it to the opposite wall. This closes off the stall behind, so that if the horse should break loose at night, he is actually confined to his own stall. In the morning, the barrier slides back again into their sheaths, where they are out of the way till next required. Two or more barriers can be used in each division, but one is generally found sufficient.

BIRDS:

DAMAGE DONE BY THEM, AND THE GOOD THEY DO.

"In medio tutissimus ibis."

MR. ABBEY is among the few gardeners who take a liberal and sane view on the subject of the mischief done by birds. He said everything in their favour, and little against them. When birds become too numerous that damage is done. In cold, dry springs, where Sparrows are numerous and caterpillars scarce, I have seen nearly the whole of the buds of the gooseberries destroyed by them, and the birds allow them to build near their houses, but make a great deal of noise and try to scare them away when their wheat is ripe, and the birds get into flocks of a thousand strong. They do little damage, as they live mostly on small worms and insects, but in a scorching June only they will take a very great quantity of strawberries and currants. The great cormorant of the fruit is the wary Blackbird. Surely Mr. Abbey will admit that they are very numerous they help themselves most and destroy immense quantities of strawberries. At the same time it must be allowed, that when breeding, little else but caterpillars, worms, and other insects, are carried to their young ones.

The French Government have been trying to encourage the birds of all sorts, particularly Sparrows, Larks, and other sorts, which have been nearly extirpated in that country.

The French have few birds excepting the migratory nightingales, Blackcaps (the *Fauvettes*), Wood Wrens, &c., people there have found out that for want of the natural enemies their crops are damaged by caterpillars and all sorts.

Being no law of primogeniture as to landed property, the land is so much divided in small portions and that it will require a very stringent enactment to compel a meritable host of little landholders to abstain from the depredations on their own estates. It is the same in the island of Jersey, where one hundred fowls may be seen with guns after a couple of Woodcocks in the winter, when these birds live on the island.

They do a great deal of good to the farmer also; but they must be suffered to increase too much. It is ridiculous to suppose if these birds were left alone altogether that no mischief would be done by them, as alleged by some writers. They destroy the seed crop of potatoes, wheat, or any corn sown almost entirely, and I have seen them attack the pears in orchards in Gloucestershire, particularly in

dry seasons, not to mention the walnuts, which they carry off in great quantities in October.

The poor Larks are quite harmless, and they are cruelly shot in great numbers to be eaten.

The winter of 1860-61 has made great havoc amongst the birds, and I can see a great diminution in their numbers, particularly in those of our sweet songsters, the common Thrush (*Turdus musicus*). The Missel Thrush, also, has not been seen so frequently the last spring in this neighbourhood, and I miss his wild chant during storms.

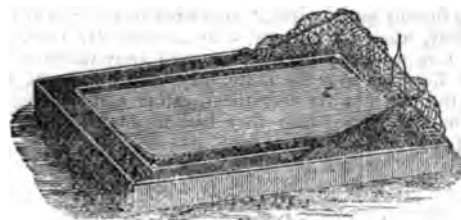
It would be almost impious to say that any living creature was not sent into the world by their Creator for some good purpose; but common experience tells us certain creatures must be lessened in numbers from time to time, the same as the common cattle which we live on.

On the whole, I highly commend Mr. Abbey for going out of the vulgar track of gardeners in general, some of whom grudge even the poor Robin a few currants, although this bird almost begs and waits for a worm, and enters our houses in severe winters to seek shelter from the cold. I have heard gardeners call him a little "robbing" bird.

Those migrating birds included in the category of "garden warblers," are in July great pillagers of strawberries, raspberries, and red currants; but no one ought to look on this but as a fair return for their beautiful song.—H. W. NEWMAN, *Hillside, Cheltenham*.

CULLINGFORD'S BIRD TRAP.

THE engraving illustrates a very ingeniously-constructed trap for the purpose of capturing birds, that has been issued by Mr. Cullingford. It consists of a central platform which always freely slides from side to side, being supported on a pivot at each end. On this platform is placed the bait, consisting of grain or whatever material may be attractive to the bird which it is desired to capture. Around this platform is a deep groove to contain the



net, which is securely fastened down around one half of the trap, the remainder being attached to a wire forming three-fourths of a square; this is turned into a spiral spring where it is connected with the trap. The consequence of this arrangement is, that when the net is pulled back into the position shown in the engraving, and then liberated, it is by the action of the spiral spring quickly thrown over the entire platform, securing any animal that may be upon it. When set for use the wire covering the net is forced back into the groove to the right hand, and secured by bringing over it the pointed wire which is shown in the erect position in the engraving; the point of this wire is held down by the small catch shown on the platform.

It is obvious that the movements of any bird or other animal on the platform must of necessity cause it to sway to one side or the other; and the result is, that the pointed wire being liberated from the catch permits the spring and wire to pull the net over the platform and secure the bird.

STOCK OF CANARIES—FOOD FOR YOUNG CANARIES.

THE size of the aviary is 3 feet by 4 feet; height 9. I propose to begin with six green hen Canaries, and two golden yellow cocks: may they be placed together now, and allowed to bring off their young as frequently and as early as they please? for, in my breeding-cage, a hen Canary has laid sixteen eggs; forsaking her young at the end of a fortnight, to the injury of her elder brood. Would it answer to put in a cock Goldfinch to get used to the Canaries, and place him in a breeding-cage with a suitable hen early in the spring?

Any suggestion to save the quantity of eggs consumed by the young birds would be most acceptable, as the older birds most freely partake of the food provided for the nestlings.

[I consider it would be better to put one cock and four hens in the proposed aviary than two cocks and six hens in so small a space; and as the season is so far advanced, it would be better not to put the cock in until the spring, but a Goldfinch would do no injury at present.

I know of no better food for the old to feed their young on than hard-boiled egg, bread, and maw-seed, with plenty of fresh green meat.—B. P. BRENT.]

THE JAPANESE OR AILANTHUS SILKWORM.

THIS species, which M. Guerin-Meneville has naturalised in central France, is reared in the open air, and its food—the leaf of the Japan varnish tree—prosperes in the poorest soils capable of producing no grains, vines, or grapes for pasture. This worm demands very little care; it is exposed with impunity to violent storms, has not been affected by the epidemic disease so fatal to the silk culture in Southern Europe, and may be destined to furnish for western countries, as it has for many centuries in China, the silk of the people. At the château de Leygouttier, the residence of M. Aiguillon, a distinguished agriculturist of Toulon, a part of these worms were raised in a close cabinet, another set in a greenhouse well aired both day and night, and a third division in the open air upon hurdles left out of doors, and on trees merely covered with a netting for protection against birds.

At the château de Coudray-Montpensier, also, Count Lamotte-Baracca has had these silkworms reared in the open air on magnificent clumps of the Japanese varnish tree 12 feet to 16 feet high. The cocoons obtained from those kept exposed to all weathers are larger and richer in silk than from those which have been protected or confined; and at Toulon, as at Coudray, the worms have undergone several violent storms, with beating rains and furious gusts, without appearing to suffer in any way. At Coudray, after a hurricane, July 20 and 21, 1859, which broke or tore up many trees, and carried away the suspension bridge of Langeais, over the Loire, they were found next morning with the rain flowing over them, eating and weaving their cocoons on the trees where they had maintained themselves safely.—(*Prairie Farmer*.)

WASPS.

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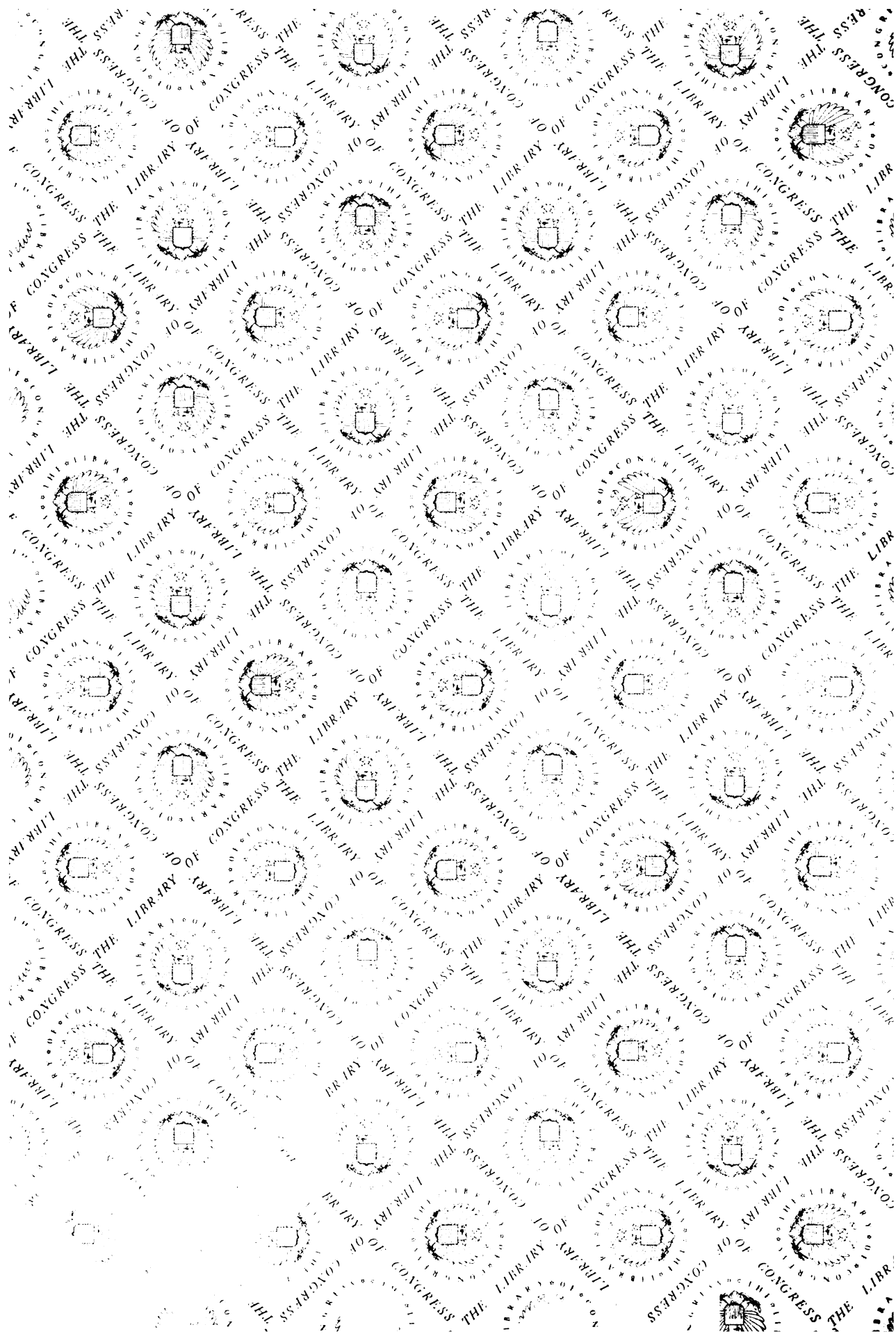
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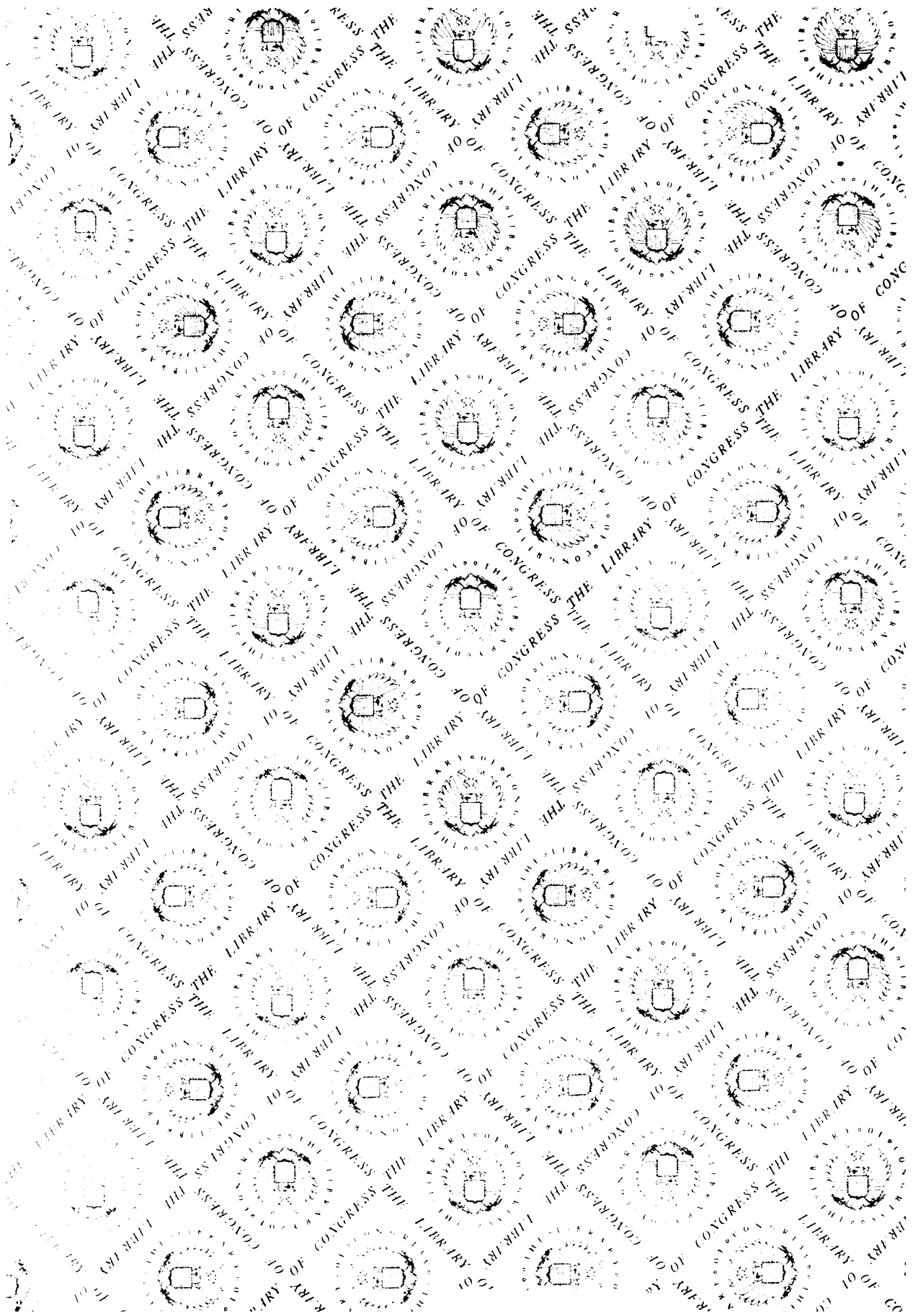
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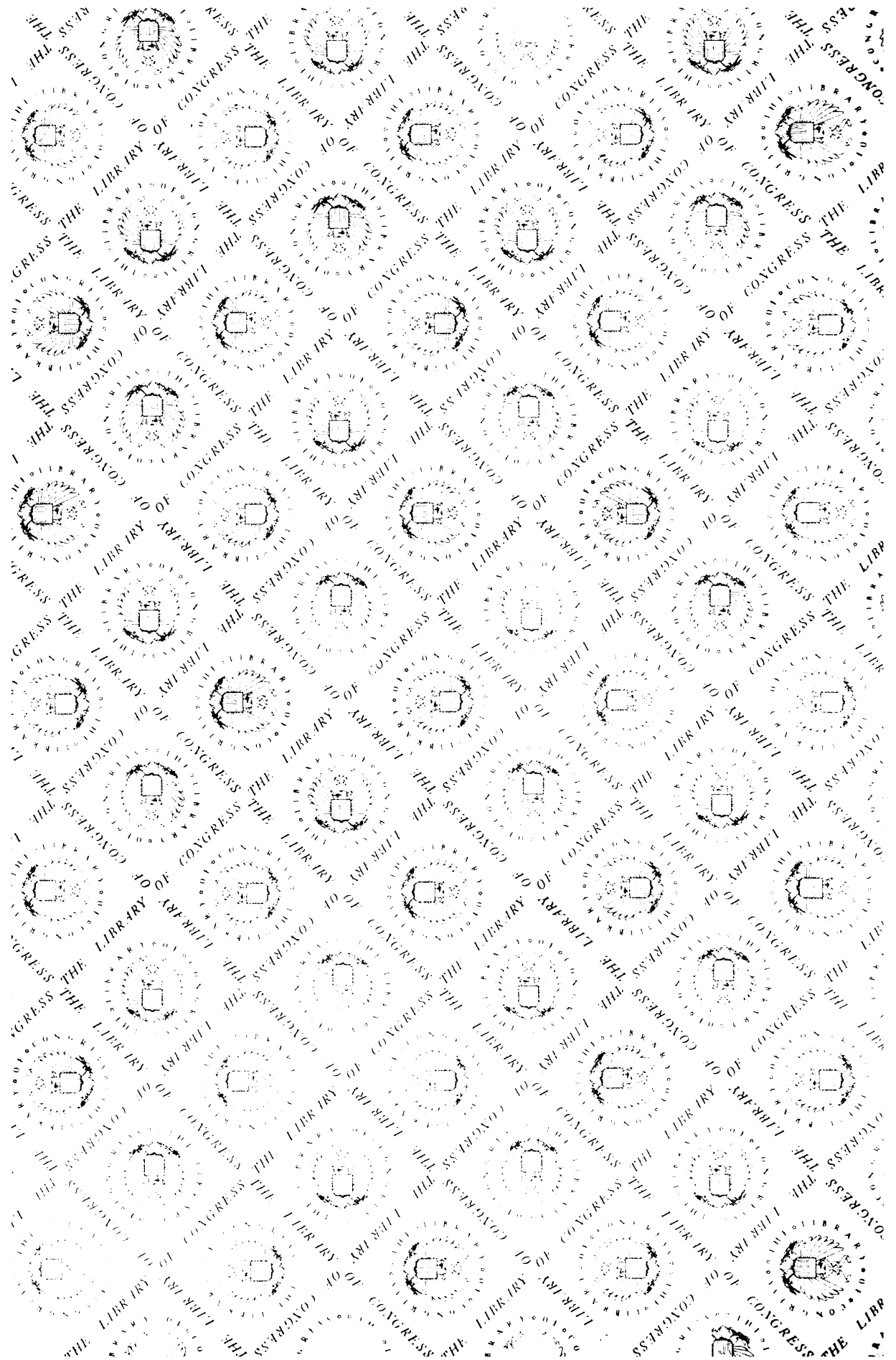


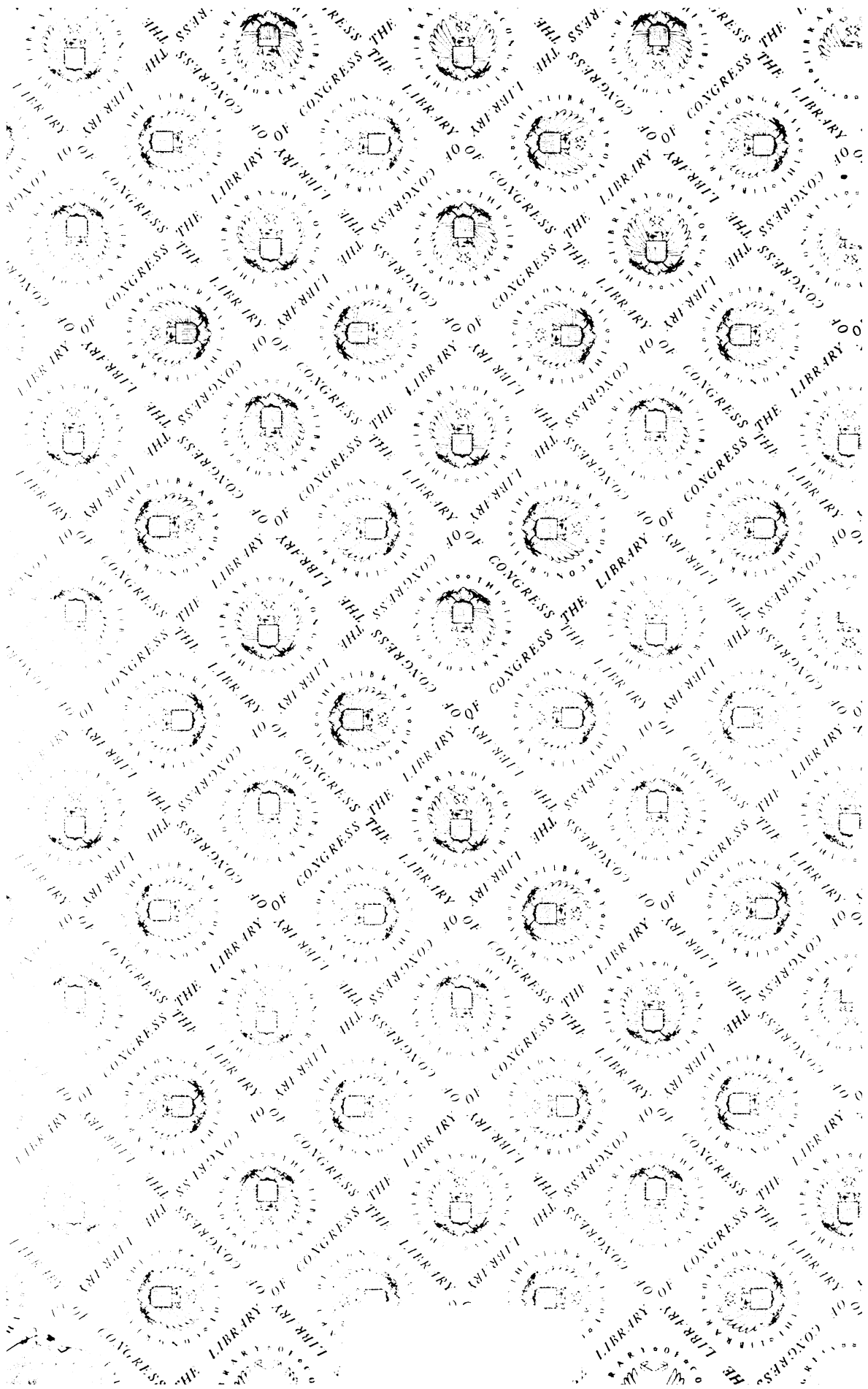


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